

Citywide  
Facility Condition Assessment

Report of  
Facility Condition Assessment

For  
City of Manhattan Beach  
Manhattan Village Soccer Field  
1300 Parkview Avenue, Manhattan Beach, CA



*September 4, 2013  
(Rev A)*

Provided By:

**Faithful+Gould, Inc.**

Provided For:



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## SECTION 1 - EXECUTIVE SUMMARY

### INTRODUCTION

In accordance with the agreement held between City of Manhattan Beach, dated May 9, 2013 and Faithful+Gould Inc, this completed report provides a comprehensive Facility Condition Assessment of the Manhattan Village Soccer Field located at 1800 Parkview Avenue, Manhattan Beach, CA (The Facility). The facility consisted of the following buildings:

-  Restrooms
-  Storage Shed

This report provides a summary of the facility information known to us at the time of the study, the scope of work performed, an equipment inventory, evaluation of the visually apparent condition of the Property and an expenditure forecast of expenditures anticipated over the next 10 years. The expenditure forecast does not account for typical planned maintenance items such as changing filters to fan coil units and only considers deficiencies above a \$500 aggregated value.

Our cost rates to produce life cycle and replacement cost estimates are based on our knowledge of the local regional market rates. Our line item costs assume that the work will be undertaken by either in-house or by direct sub-contract labor. Identified recommended works that are required during the ten-year study period have been included with an allowance of 25% for professional fees and general contractor overhead/profit and management costs (where applicable).

Charts EX-1 through EX-3 provides a summary of the anticipated primary expenditures over the 10 year study period. Further details of these expenditures are included within each respective report section and within the 10 year expenditure forecast, in Appendix A.

The report also calculates the Facility Condition Index (FCI) of each building based upon the calculated FCI. Further discussion of the Facility Condition Index is detailed in the sections below. The FCI does not include the general site systems, however we have still included repair and replacement costs so that they can be represented in the study.

This report was completed in general accordance with the ASTM E2018-08 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process.

### PROJECT DETAILS

On May 14, 2013, Mr. Jeffrey Dillon of Faithful+Gould visited the facility to observe and document the condition of the building and the site components. During our site visit, Faithful+Gould was assisted by Mr. Doug Foster, Senior Facilities Maintenance Technician for the City of Manhattan Beach.

### Overview of the Buildings at the Facility



— Assumed site boundary

**BUILDING SUMMARY**

Table EX-1 Facility Details

<b>BUILDING NAME:</b>	Restrooms	<b>LAT/LONG:</b>	33° 90'00"N / -118° 38'45"W
<b>ADDRESS:</b>	1300 Parkview Avenue Manhattan Beach, CA 90266	<b>OCCUPANCY STATUS:</b>	
<b>HISTORIC DISTRICT:</b>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	OCCUPIED <input checked="" type="checkbox"/> VACANT <input type="checkbox"/> PARTIALLY <input type="checkbox"/>	
<b>HISTORIC BUILDING:</b>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<b>GROSS SQUARE FOOTAGE OF LAND:</b> 45,375 (estimated) Entire Facility	
<b>GROSS SQUARE FOOTAGE OF BUILDING:</b>	480	<b>YEAR OF CONSTRUCTION:</b>	1986
<b>CURRENT REPLACEMENT VALUE:</b>	\$113,987	<b>BUILDING EUL:</b>	60 Years
		<b>BUILDING RUL:</b>	33 Years
<b>BUILDING USE:</b>	Restrooms	<b>NUMBER OF STORIES:</b>	1

**BUILDING DESCRIPTION**

The Restrooms are located at 1300 Parkview Avenue and was constructed in circa 1986.

The building has a wood joist roof construction which is supported via concrete masonry units that have a decorative split face finish. The pitched roof area contained an architectural grade asphalt shingle roofing system. The floor consisted of a cast-in-place reinforced slab-on-grade concrete slab. Windows are limited to metal grates and the doors consisted of steel service doors.

The interior finishes of the building contained unfinished concrete masonry unit walls, the exposed concrete slab-on-grade floor and the painted roof framing and sheathing at the ceilings.

The building is not provided with heating or cooling. Ventilation is via the steel grate windows. Hot water is also not provided to the facility. The Main Distribution Panel is a Square D unit that is rated at 277/480 volts at 400-amps. The interior lighting is generally provided by recessed and surface mounted 2' x 4' and fluorescent fixtures with T8 watt bulbs and electronic ballasts, compact fluorescents and wall mounted fixtures.

The building does not have a sprinkler system, fire alarm system, or an intruder security alarm.



**Table EX-2 Facility Details**

<b>BUILDING NAME:</b>	Storage Shed	<b>LAT/LONG:</b>	33°.90'00"N / -118°.38'45"W
<b>ADDRESS:</b>	1300 Parkview Avenue Manhattan Beach, CA 90266	<b>OCCUPANCY STATUS:</b>	
<b>HISTORIC DISTRICT:</b>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<b>HISTORIC BUILDING:</b>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<b>GROSS SQUARE FOOTAGE OF BUILDING:</b>	64	<b>GROSS SQUARE FOOTAGE OF LAND:</b>	135,000 (estimated) Entire Facility
<b>CURRENT REPLACEMENT VALUE:</b>	\$11,008	<b>YEAR OF CONSTRUCTION:</b>	1986
		<b>BUILDING EUL:</b>	60 Years
		<b>BUILDING RUL:</b>	33 Years
<b>BUILDING USE:</b>	Storage	<b>NUMBER OF STORIES:</b>	1

**BUILDING DESCRIPTION**

The Storage Shed is located at the northern end of the soccer field at 1300 Parkview Avenue and was constructed in circa 1986.

The building has a wood joist roof construction which is supported via wood framed walls which are encapsulated with pressed board type siding and with concrete masonry units at the lower portion of the rear wall. The pitched roof contained an asphalt shingle roof covering. The floor consisted of a concrete slab-on-grade. The front door consisted of a single hollow core metal door.

The interior finishes of the building contained the concrete-slab-on grade and the exposed perimeter wall and roof framing.

The building is provided with electric service rated at 120/240 volts from the adjacent restroom building.

The building does not contain HVAC, domestic water, wet-pipe sprinkler system, fire alarm system, intruder security alarm or emergency generator.



**ENVIRONMENTAL REVIEW**

During the assessment period an inspection and survey to ascertain if Asbestos Containing Materials (ACM) and Lead-Based Paint (LBP) are present at the interior and exteriors of the facility buildings. The assessment was undertaken by Andersen Environmental and their full report can be reviewed Appendix E. A summary of results indicate the following:

The following materials at the facility buildings were found to contain asbestos and considered ACM:

**Table EX-3 Summary of Asbestos Results**

Material Description	Material Location	Condition	Asbestos Percentage	Estimated Quantity*
Roofing Materials (Mastic & Felts)	Roof	Good	Presumed	1,500

\* These quantities are only approximations

All other suspect materials sampled during this assessment tested negative for asbestos.

Expenditure relating to the removal of the ACM has not been provided within this report. We recommend that the abatement contractor is selected through a bidding process.

Lead-Based Paint was also identified at the building. Through sampling of several paint components the presence of LBP was indicated at or above the action level at the following locations:

- All interior and exterior painted surfaces samples during the inspection tested negative for lead-based paint.

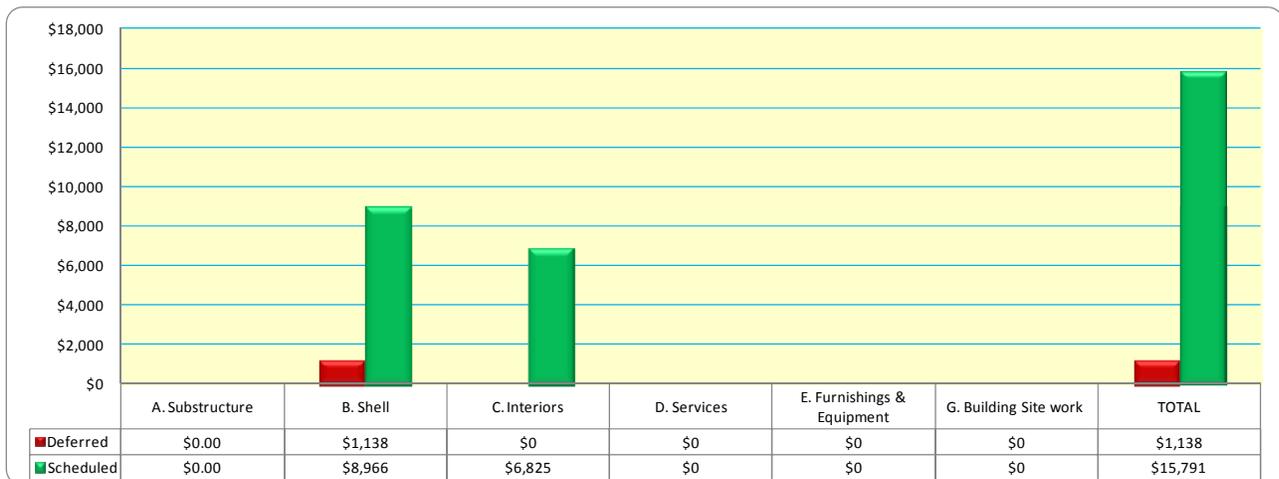
## BUILDING EXPENDITURE SUMMARY

The building expenditure summary section provides an executive overview of the findings from the assessments. Charts EX-1 and EX-2 provides a summary of anticipated expenditures over the study period. In addition, we have scheduled key findings highlighting key items of significance and their anticipated failure year. Chart EX-3 provides a cursory review and assessment of the major site assets to further assist the City in understanding the condition of the park over all. We have scheduled key findings highlighting key items of significance and their anticipated failure year. Further details of these expenditures and others are included within each respective report section and within the expenditure forecast, in Appendix A of this report.

### Restrooms

The results illustrate a total anticipated expenditure over the study period of circa \$16,929.

Chart EX-1 Building Expenditure Summary <sup>1 & 2</sup>



## KEY FINDINGS

-  B Shell: Repaint exterior wall surfaces at an estimated cost of \$1,138 in years 2013, 2017 and 2021
-  B Shell: Install door hardware at an estimated cost of \$1,568 in year 2014
-  B Shell: Replace asphalt shingle roof covering at an estimated cost of \$5,123 in year 2019
-  C Interiors: Repaint interior wall surfaces at an estimated cost of \$2,275 in years 2014 and 2018

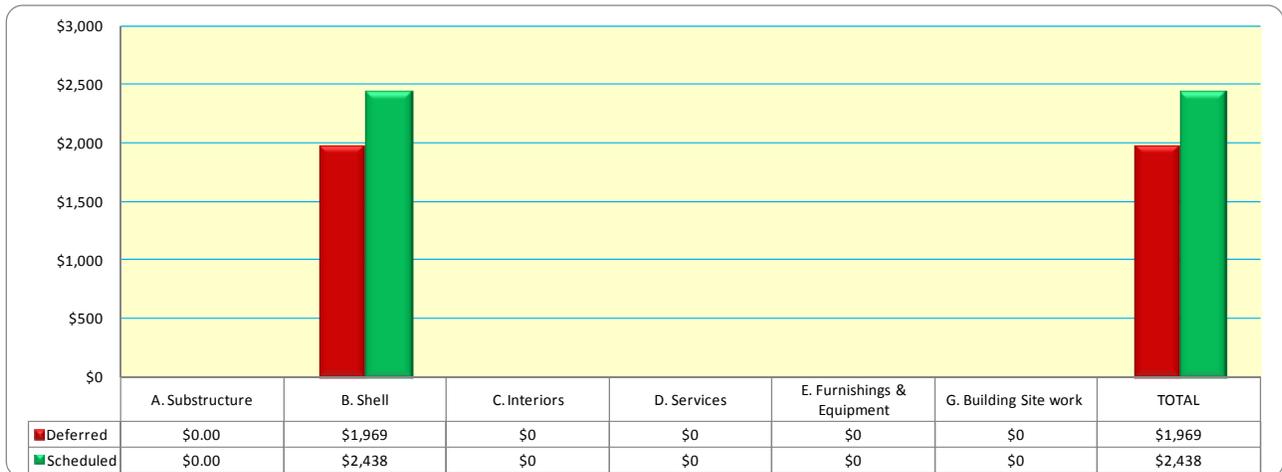
<sup>1</sup> All costs presented in present day values

<sup>2</sup> Costs represent total anticipated values over the 10 year study period

**Storage Shed**

The results illustrate a total anticipated expenditure over the study period of circa \$4,406.

**Chart EX-2 Building Expenditure Summary <sup>1 & 2</sup>**



**KEY FINDINGS**

- ✦ B Shell: Repaint exterior wall surfaces at an estimated cost of \$1,219 in years 2013, 2017 and 2021.

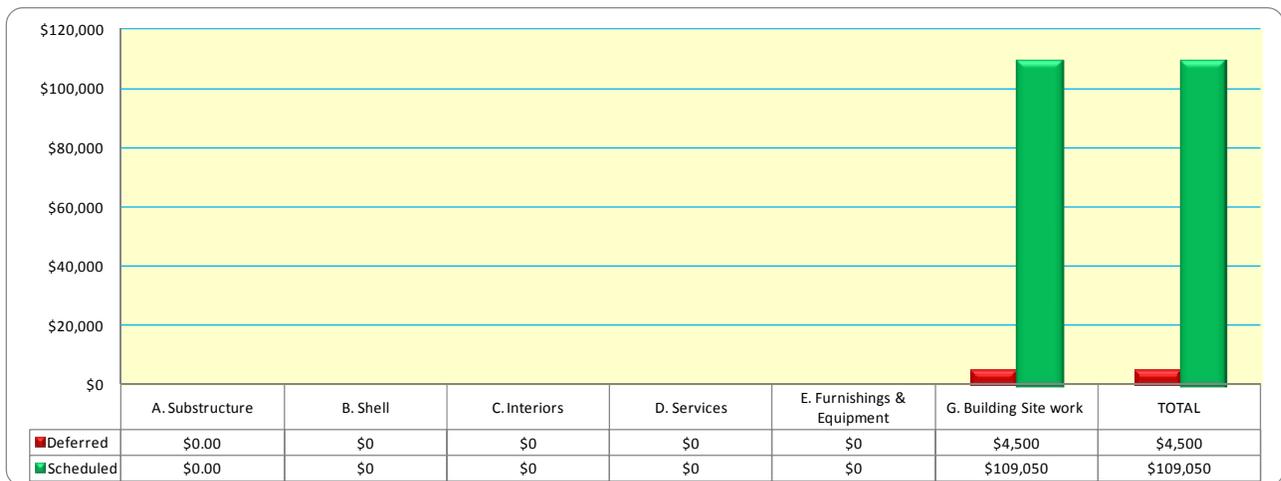
<sup>1</sup> All costs presented in present day values

<sup>2</sup> Costs represent total anticipated values over the 10 year study period

**SiteSystems**

The results illustrate a total anticipated expenditure over the study period of circa \$113,550.

**Chart EX-3 Building Expenditure Summary <sup>1 & 2</sup>**



**KEY FINDINGS**

- ✚ G Building Sitework: Repair, seal and stripe the asphalt pavement at an estimated cost of \$2,550 in years 2014, 2017 and 2020
- ✚ G Building Sitework: Repair the soccer field fencing at an estimated cost of \$4,500 in year 2013 and a further full replacement estimated at \$45,000 in year 2017
- ✚ G Building Sitework: Replace light fixtures at an estimated cost of \$55,400 in year 2018

<sup>1</sup> All costs presented in present day values

<sup>2</sup> Costs represent total anticipated values over the 10 year study period

Chart EX-4 illustrates a summary of yearly anticipated expenditures over the cost study period for the two buildings. A detailed breakdown of anticipated expenditures is contained within Appendix A of this report.

Chart EX-4 Expenditure Forecast <sup>1 & 2</sup>



<sup>1</sup> All costs presented in present day values

<sup>2</sup> Costs represent total anticipated values over the 10 year study period

This chart highlights expenditure for the buildings within years 2017 due to the following systems which are expected to reach their Estimated Useful Life (EUL) and therefore due for replacement. The lines represent the total expenditure for each year and is a useful tool to indicate the magnitude of the impending issues the buildings will face.

Site Systems

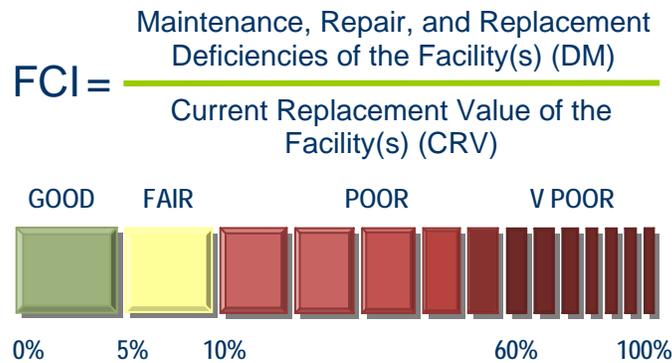
Year 2017

- Replacement of light fixtures

**INTERPRETING RESULTS**

In this report we have calculated the **Facility Condition Index (FCI)** for the facility; illustrating the likely condition of the systems and equipment should the required funding not be expended over the cost study period. The FCI is used in Facilities Management to provide a benchmark to compare the relative condition of a group of facilities. The FCI is primarily used to support asset management initiatives of federal, state, and local government facilities organizations.

The FCI is the ratio of accumulated Deferred Maintenance (DM) (total sum of required and recommended works) to the Current Replacement Value (CRV) for a constructed asset calculated by dividing DM by CRV. The range is from zero for a newly constructed asset, to one for a constructed asset with a DM value equal to its CRV. Acceptable ranges vary by "Asset Type", but as a general guideline the FCI scoring system is as follows:



The FCI is a relative indicator of condition, and should be tracked over time to maximize its benefit. It is advantageous to define condition ratings based on ranges of the FCI. There are a set of ratings: GOOD (under 0.05 (under 5%)), FAIR (0.5 to 0.10 (5% to 10%)), POOR (over 0.10 (over 10%)) and V-POOR (over 0.60 (over 60%)) based on evaluating data from various clients at the time of the publication. Table EX-4 will help interpret the results:

**Table EX-4 FCI Scoring System**

Condition	Definition	Score	Percentage Value
GOOD	In a new or well maintained condition, with no visual evidence of wear, soiling or other deficiencies	0.00 to 0.05	0% to 5%
FAIR	Subject to wear, and soiling but is still in a serviceable and functioning condition	0.05 to 0.10	5% to 10%
POOR	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.	Greater than 0.10	Greater than 10%
V-POOR	Subjected to hard or long-term wear. Has reached the end of its useful or serviceable life. Renewal now necessary	Greater than 0.60	Greater than 60%

If the FCI rating is 60% or greater then replacement of the asset/building should be considered instead of renewal.

Table EX-5 provides a calculation of the FCI for the building illustrating both the current condition of the building and the likely condition of the building should the required funding not be expended over the study period. The results of the study indicate that The Restroom building contains a GOOD condition index rating at this time and the Storage Shed a POOR condition index rating.

**Table EX-5 Facility Condition Index**

Building Name	FCI	Gross Square Foot (GSF)	CRV per GSF	Current Replacement Value (CRV)	Deferred Maintenance Value (DM) <small>1 &amp; 2</small>	FCI Ratio	Property Condition Rating
Restrooms	Current FCI Ratio	480	\$237	\$113,987	\$1,138	1.0%	GOOD
Restrooms	Year 10 FCI Ratio	480	\$237	\$113,987	\$16,929	14.9%	POOR
Storage Shed	Current FCI Ratio	64	\$172	\$11,008	\$1,969	17.9%	POOR
Storage Shed	Year 10 FCI Ratio	64	\$172	\$11,008	\$4,406	40.0%	POOR

<sup>1</sup> All costs presented in present day values

<sup>2</sup> Costs represent total anticipated values over the 10 year study period

Chart EX-5 indicates the effects of the FCI ratio per year, assuming the required funds and expenditures **ARE** made to address the identified works each year. As explained, the Restroom building has a GOOD condition rating (below 5%) at the start and obtains a FAIR (5% to 10%) during the study period: the storage shed has a FAIR condition rating (5% to 10%) at the start.

Chart EX-5 Year by Year Effects of FCI over the Study Period

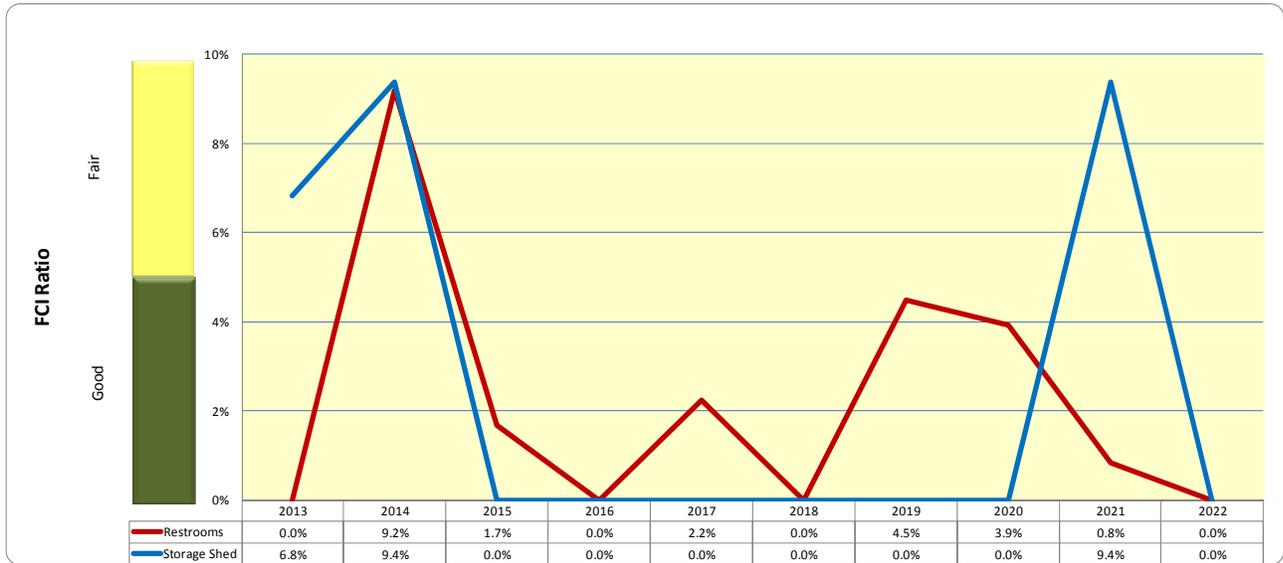
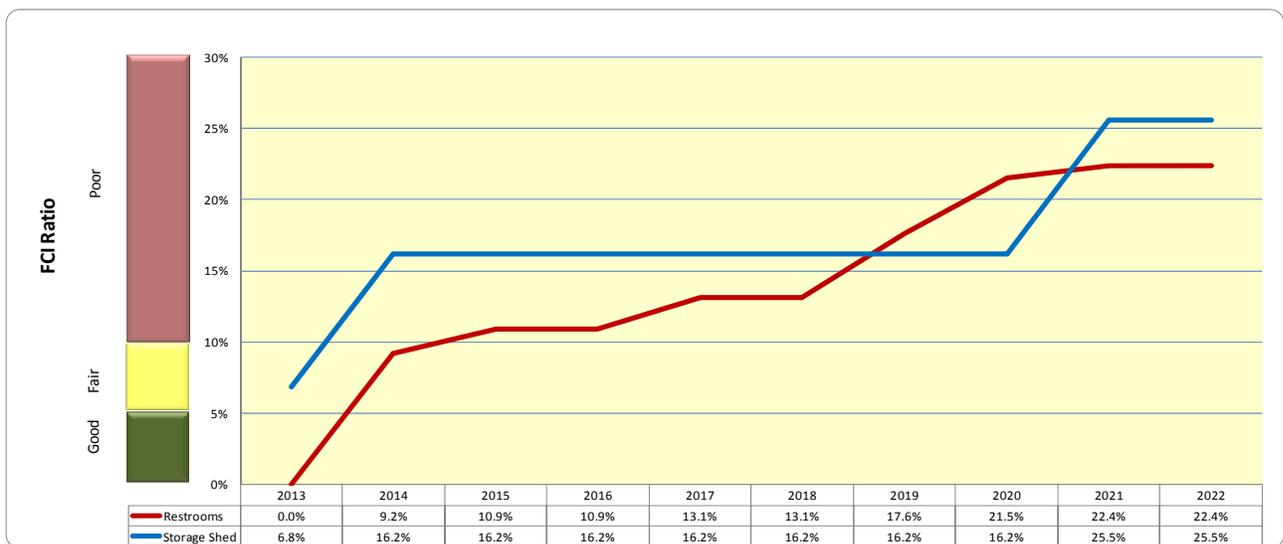


Chart EX-6 indicates the cumulative effects of the FCI ratio over the study period assuming the required funds and expenditures are **NOT** provided to address the identified works and deferred maintenance each year. The results of the study indicate at this current time the restroom building is maintained with a GOOD condition index rating; however mid-term in the study period both building are found to be in the POOR condition rating.

Chart EX-6 Cumulative Effects of FCI over the Study Period



**PRIORITIZATION OF WORK**

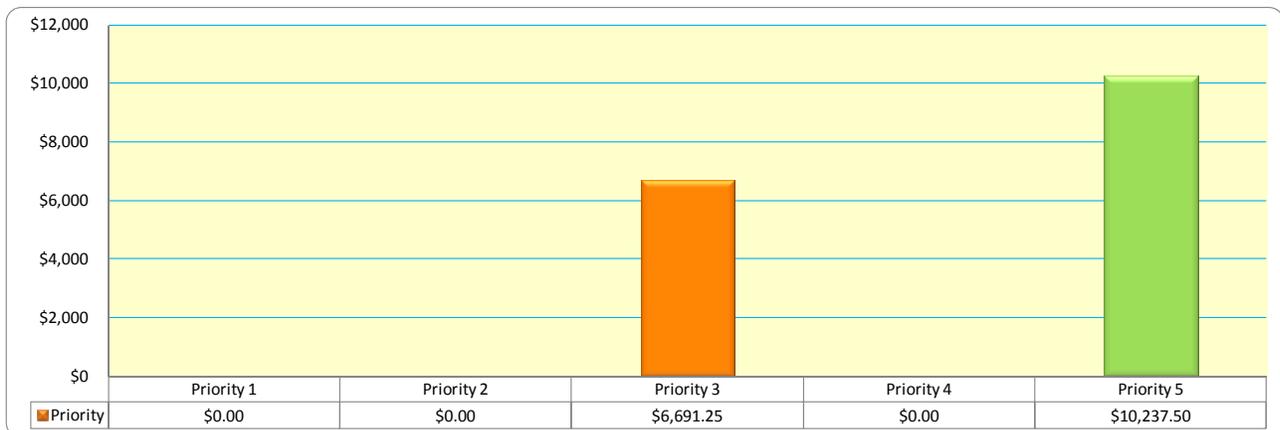
Faithful+Gould has prioritized the identified work in order to assist with analyzing the deficiencies found during the assessments. The following Priorities are shown below:

<b>Priority 1 - Life Safety/ Code Compliance/ADA:</b>	•Compromises staff or public safety or when a system requires to be upgraded to comply with current codes and standards.
<b>Priority 2 – Currently Critical:</b>	•A system or component is inoperable or compromised and requires immediate action
<b>Priority 3 – Necessary / Not Critical:</b>	•Maintain the integrity of the facility or component and replace those items, which have exceeded their expected useful life
<b>Priority 4 – Recommended:</b>	•Necessary for optimal performance of the facility or component
<b>Priority 5 – Appearance:</b>	•Used when a system has degraded and requires refurbishment

Chart EX-7 through EX-9 illustrates the breakdown of expenditure according the priority coding providing an opportunity to strategically plan and effectively direct funding to the highest priority.

**Restrooms**

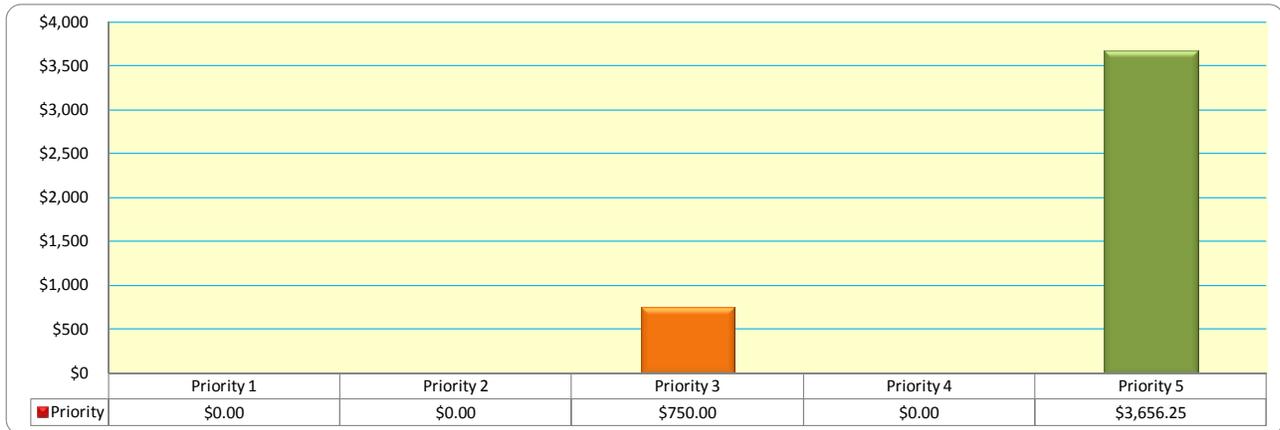
Chart EX-7 Cumulative Prioritization of Work



Priority 5 appears to require the most amount of expenditure in this study. This category illustrates that the majority of the work which needs to be undertaken is associated with the appearance of the building.

**Storage Shed**

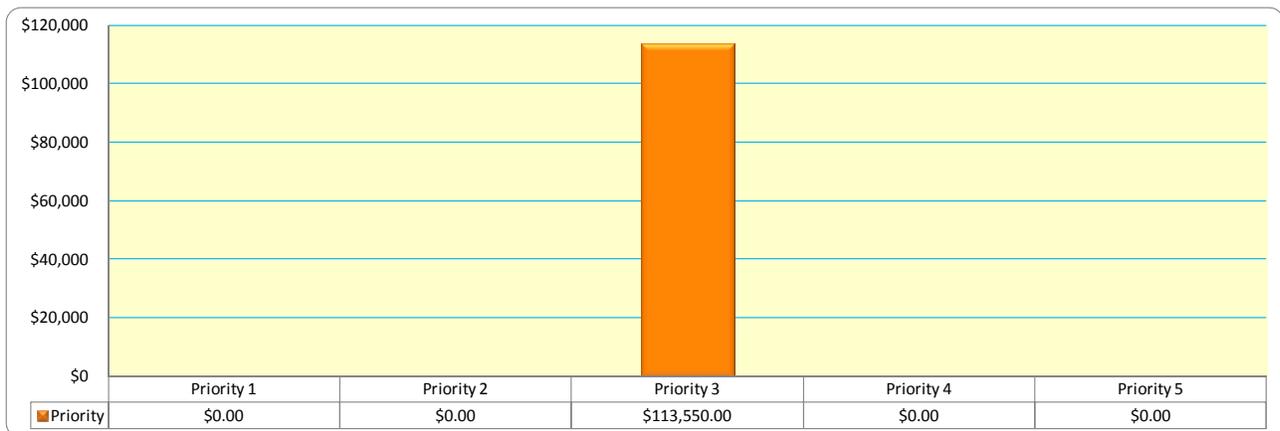
**Chart EX-8 Cumulative Prioritization of Work**



Priority 5 appears to require the most amount of expenditure in this study. This category illustrates that the majority of the work which needs to be undertaken is associated with the appearance of the building.

**Site Systems**

**Chart EX-9 Cumulative Prioritization of Work**



Priority 3 requires the most amount of expenditure in this study. The expenditures relate to maintaining the site, replacing components at the end of useful life

Charts EX-10 through to EX-12 illustrates the buildings' expenditure per priority code, per each year within the 10 year study period.

**Restrooms**

**Chart EX-10 Year by Year Cumulative Prioritization of Work**



Chart EX-10 illustrates that there is one key year for Priority 3 year 2019.

**Storage Shed**

**Chart EX-11 Year by Year Cumulative Prioritization of Work**

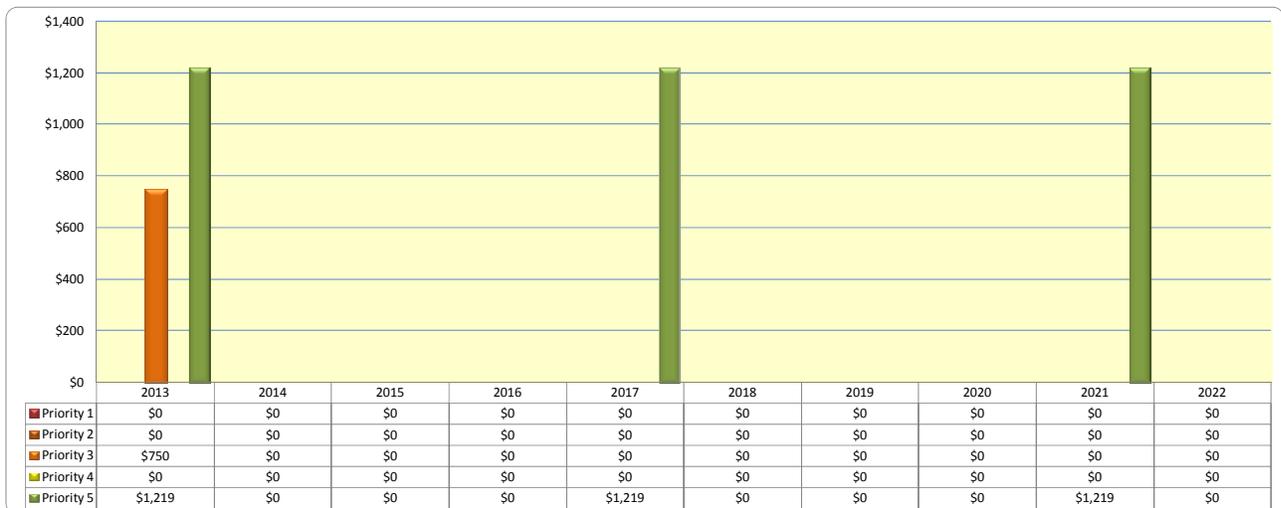


Chart EX-11 illustrates that there are three key years for Priority 5 throughout the study period.

**Site Systems**

**Chart EX-12 Year by Year Cumulative Prioritization of Work**

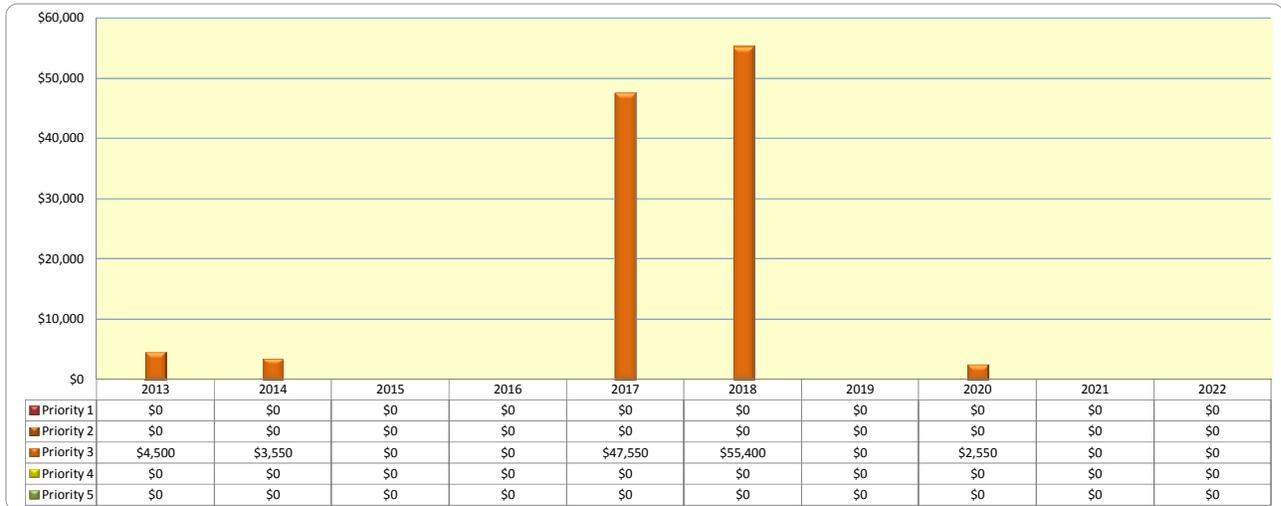


Chart EX-12 illustrates that there are two main expenditure years for Priority 3 coding mid-term in the study period.

**PLAN TYPES**

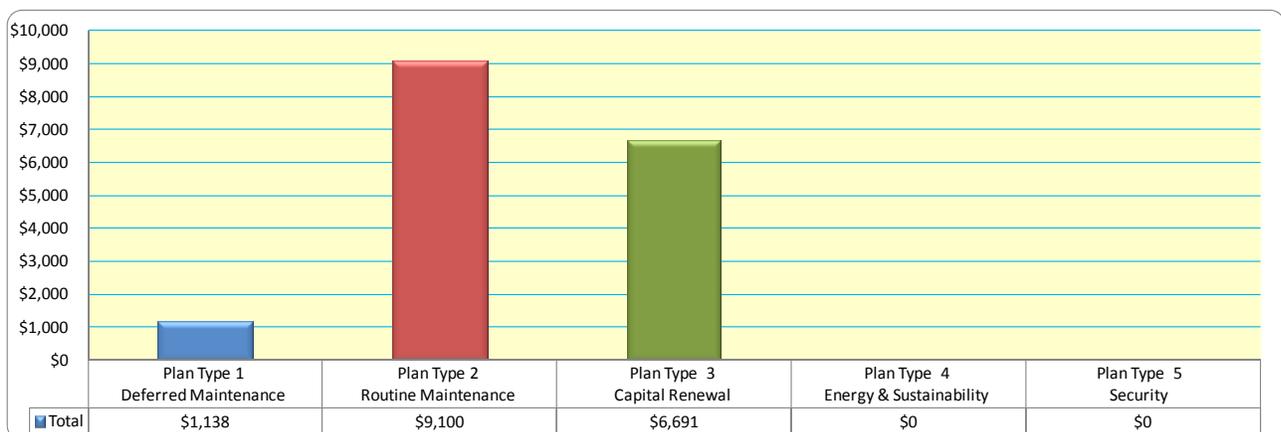
Faithful+Gould has prioritized the identified work according to the Plan Type or deficiency categories in order to assist with analyzing the deficiencies found during the assessments. The following Plan Types are shown below:

<b>Plan Type 1</b> <b>Deferred Maintenance</b>	<ul style="list-style-type: none"> <li>•Maintenance that was not performed when it was scheduled or past its useful life resulting in immediate repair or replacement</li> </ul>
<b>Plan Type 2</b> <b>Routine Maintenance</b>	<ul style="list-style-type: none"> <li>•Maintenance that is planned and performed on a routine basis to maintain and preserve the condition</li> </ul>
<b>Plan Type 3</b> <b>Capital Renewal</b>	<ul style="list-style-type: none"> <li>•Planned replacement of building systems that have reached the end of their useful life</li> </ul>
<b>Plan Type 4</b> <b>Energy &amp; Sustainability</b>	<ul style="list-style-type: none"> <li>•When the repair or replace of equipment or systems are recommended to improve energy and sustainability performance.</li> </ul>
<b>Plan Type 5</b> <b>Security</b>	<ul style="list-style-type: none"> <li>•When a system requires replacement due to a security risk or requirement</li> </ul>

Charts EX-13 through EX-15 illustrate the breakdown of expenditure according to the Plan Type or deficiency categories providing an opportunity to strategically plan and effectively direct funding.

**Restrooms**

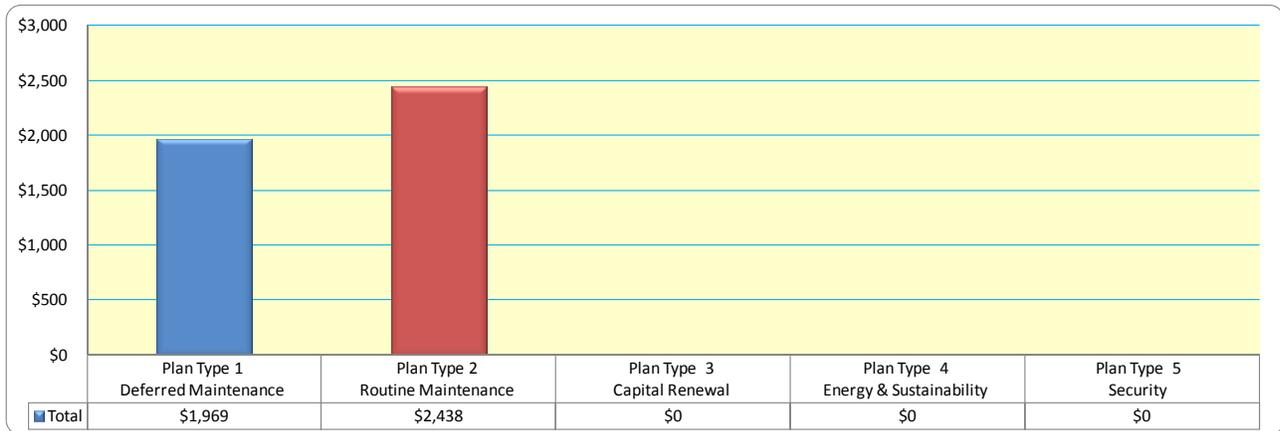
Chart EX-13 Cumulative Expenditure by Plan Type



Plan Type 2 – Routine Maintenance appears to require the most expenditure in this study.

**Storage Shed**

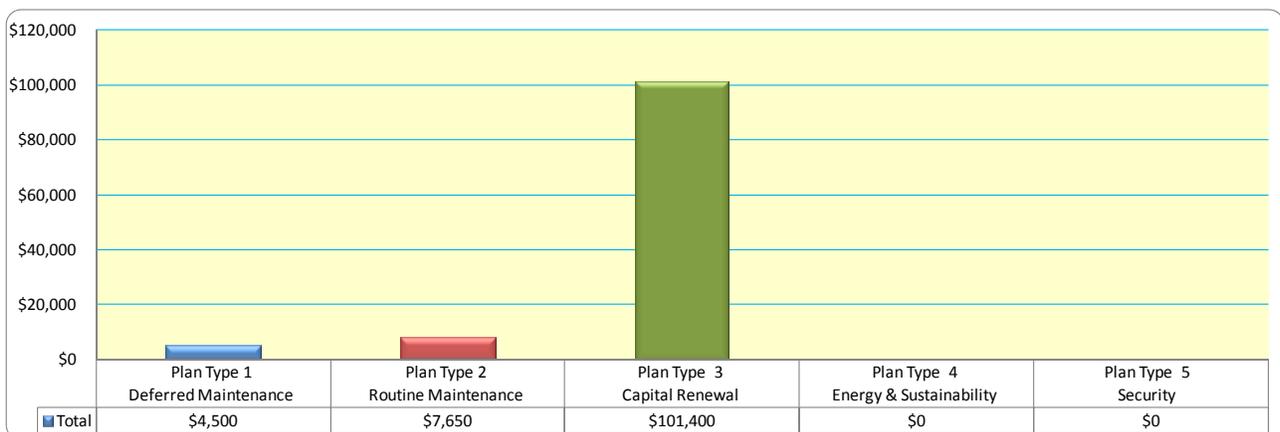
**Chart EX-14 Cumulative Expenditure by Plan Type**



Plan Type 2 – Routine Maintenance appears to require the most expenditure in this study.

**Site Systems**

**Chart EX-15 Cumulative Expenditure per Category of Works**



Plan Type 3 – Capital Renewal appears to require the most expenditure in this study.

Chart EX-16 through to EX-18 illustrates the amount of expenditure, per category, per each year within the 10 year study period.

**Restrooms**

**Chart EX-16 Yearly Expenditure by Plan Type**



Chart EX-16 illustrates that there is expenditure needed for two Plan Types during the study period.

**Storage Shed**

**Chart EX-17 Yearly Expenditure by Plan Type**

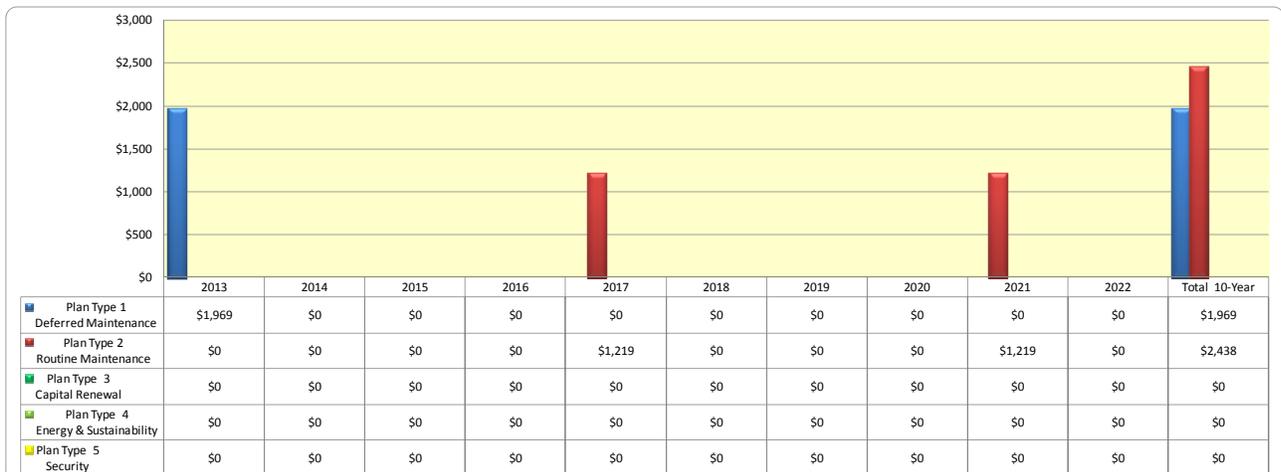


Chart EX-17 illustrates that there is expenditure needed for two Plan Types during the study period.

Site Systems

Chart EX-18 Year by Year Cumulative Expenditure per Category of Works



Chart EX-18 illustrates that there are two expenditure years for Plan Type 3 – Capital Renewal during the study period.

## SECTION 2 - A SUBSTRUCTURE

### A10 FOUNDATIONS

#### DESCRIPTION

The description of the respective structural systems for the building is based upon our observation of exposed portions of the building structure. There were partial structural drawings available to review.

#### A1010 STANDARD FOUNDATIONS

##### Restroom & Storage Shed

##### A1011 Wall Foundations

The exterior walls are supported by reinforced concrete spread footings. The concrete has a designed compressive strength of 2,000 psi.

#### A1030 SLABS-ON-GRADE

##### Restroom & Storage Shed

##### A1031 Standard Slab-on-Grade

The first floor level of the buildings consisted of cast-in-place concrete slab-on-grade, reinforced with welded wire fabric. We assume that the floor slabs are 4" thick over an aggregate base. The slab for the storage shed is assumed to contain a thickened edge at their perimeter. The concrete slab-on-grade has a designed compressive strength of 2,000 psi.

#### CONDITION

#### A1010 STANDARD FOUNDATIONS

##### Restroom & Storage Shed

##### A1011 Wall Foundations

The floor structures appeared to be in good condition with no evidence of settlement. We do not anticipate that any actions will be generated during the study period.



**A1030 SLABS-ON-GRADE**

*Restroom & Storage Shed*

A1031 Standard Slab-on-Grade

The cast-in-place concrete slab at the building appeared to be in good condition. We do not anticipate any expenditure during the cost study period, which relates to its replacement.

**PROJECTED EXPENDITURES**

No projected expenditures are identified for A Substructure during the study period.

## SECTION 3 - B SHELL

### B10 SUPERSTRUCTURE

#### DESCRIPTION

The description of the respective structural systems for the buildings is based upon our observation of exposed portions of the building structure. There were no structural drawings available to review.

### B1020 ROOF CONSTRUCTION

#### B1022 Pitched Roof Construction

##### Restrooms

The building contained a pitched steep-sloped roof, with 2" x 6" wood rafter construction supported via the light wood frame construction and in turn supports the plywood deck and roof covering (reference Photograph 3 in Appendix B). The wood rafters are spaced at 24" centers. The roof covering can be viewed in the roof covering section of this report.

##### Storage Shed

The building contained a pitched steep-sloped roof, with 2" x 4" wood rafter construction supported via the light wood frame construction and in turn supports the plywood deck and roof covering. The wood rafters are spaced at 16" centers. The roof covering can be viewed in the roof covering section of this report.

### B1030 STRUCTURAL FRAME

##### Storage Shed

#### B1031 Wood Frame Structure

The building has a wood frame construction consisting of wood stud walls and wood joists.

**CONDITION**

**B1020 ROOF CONSTRUCTION**

Restrooms & Storage Shed

B1022 Pitched Roof Construction

The pitched roof construction at the buildings appeared to be in fair condition. We do not anticipate the replacement of the wood structural elements during the cost study period.

**B1030 STRUCTURAL FRAME**

Storage Shed

B1033 Wood Frame Structure

The wood framed structure appeared to be in fair condition. We do not anticipate the replacement of the wood structural elements during the cost study period.

## B20 EXTERIOR ENCLOSURES

### DESCRIPTION

The description of the respective exterior enclosures structural systems for the building is based upon our review of available drawings, and our observation of exposed portions of the building structure. There were no drawings available to review.

## B2010 EXTERIOR WALLS

### B2011 Exterior Wall Construction

#### Restrooms

The building is enclosed with split-faced concrete masonry units and wood trim (reference Photographs 1 and 4 in Appendix B). The wood trim contained a painted finish. There are CMU privacy walls along the front of the building at the restroom entrances (reference Photograph 1 in Appendix B).

#### Storage Shed

The building is predominantly enclosed with painted pressed board clapboards and wood trim (reference Photograph 2 in Appendix B). The clapboards wood trim contained a painted finish.

## B2020 EXTERIOR WINDOWS

#### Restrooms

### B2021 Windows

The windows at the building were limited to four steel grates at the upper portion of the front and rear elevations (reference Photograph 5 in Appendix B).

## B2030 EXTERIOR DOORS

#### Restroom & Storage Shed

### B2039 Other Doors & Entrances

The buildings contained single hollow metal doors and frames at the mechanical room entrances and the entrance to the shed (reference Photographs 2 and 5 in Appendix B). Entrance doors to the men's and women's restrooms were through steel gate type doors. Door hardware consisted of a knob handles.

## CONDITION

### B2010 EXTERIOR WALLS

#### B2011 Exterior Wall Construction

##### Restrooms

The exterior wall systems at the building appeared to be in fair condition with generally no major signs of deterioration, water ingress or general failure noted. The exterior painted surfaces appear to have been painted within the last 5 years and therefore based on the EUL of 4 years for exterior paint at this building, as well as current observed conditions, re-painting will be necessary near-term in the study period to maintain the appearance and protect the exterior walls.

##### Storage Shed

The exterior wall systems at the building appeared to be in fair condition. However, we observed holes in the siding and overall deterioration to the painted siding and trim surfaces (reference Photograph 6 in Appendix B). The exterior painted surfaces appear to not have been recently painted and therefore based on the EUL of 4 years for exterior paint at this building, as well as current observed conditions, we recommend near-term repair of the siding and repainting near-term in the study period to maintain the appearance and protect the exterior walls.

### B2020 EXTERIOR WINDOWS

##### Restrooms

#### B2021 Windows

The exterior window units appeared to be in fair condition and there were no major deficiencies observed. We do not anticipate any actions for their replacement as they should last beyond the study period.

The caulking at the perimeter of the window units was generally in fair condition. We recommend that the caulking at the window perimeters is replaced concurrent with exterior painting of the building. However, the cost for this work will fall below the threshold of \$500 and therefore it has not been included within this cost study.



## B2030 EXTERIOR DOORS

### B2031 Other Doors & Entrances

#### Restrooms

The metal doors and gate type doors appeared to be in fair condition and there were no observed issues. In general the operation of the doors was satisfactory and operated without any difficulty. Re-painting concurrent with the building exterior will be necessary to maintain the doors. However, the exterior doors to the buildings do not have lever hardware and we recommend replacing the knob handles with lever type to comply with ADA requirements.

#### Storage Shed

The metal door appeared to be in fair condition and there were no observed issues. In general the operation of the door was satisfactory and operated without any difficulty. Re-painting concurrent with the building exterior will be necessary to maintain the door. However, the exterior door does not have lever hardware and we recommend replacing the knob handles with lever type to comply with ADA requirements. However, the cost for this work will fall below the threshold of \$500 and therefore it has not been included within this cost study.

**B30 ROOFING**

**DESCRIPTION**

**B3010 ROOF COVERINGS**

Restroom & Storage Shed

B3011 Roof Finishes

The buildings facility contained two pitched roofs; these roof areas are shown on the following aerial plan:

**Overview of Roof Locations & Configurations**



The steep-sloped roof areas at the Restrooms and Storage Shed contained architectural style asphalt shingles with mineral surface granules (reference Photographs 7 and 8 in Appendix B). We understand that roofs were installed in circa 1991.

Table B30-1 Summary of Roof Coverings

Roof Component	Restrooms	Storage Shed
Age	1991	1991
Roof Area (total / approx. square footage)	759	70
Application/ Membrane	Fiberglass Shingles	Fiberglass Shingles
Manufacturer / Model	Unknown	Unknown
Surface	Mineral Surface	Mineral Surface
Deck Type	Plywood	Plywood
Insulation	None	None
Cover Board	None	None
Drainage	Edge	Edge
Overflow Scuppers	Two	None
Base Flashings	None	None
Cap Flashings	None	None
Perimeter Enclosure	None	None
Warranty (Manufacturer)	Unknown	Unknown
Warranty (Contractor)	Unknown	Unknown



**B3020 ROOF OPENINGS**

B3021 Glazed Roof Openings

Restrooms

The restroom building has a total of four acrylic skylights, with two in the men's room and two in the women's room (reference Photograph 7 in Appendix B). The skylights are inoperable and approximately 2' x 2' with a domed design.

**CONDITION**

**B3010 ROOF COVERINGS**

B3011 Roof Finishes

Restrooms

The pitched roof area appeared to be in fair to good overall condition. These types of roof covering have a typical EUL of 20 to 25-years and based on observed conditions and roof material ages we anticipate that the roof will require mid-term replacement. We are unaware or could not visually see any possible areas of water ingress.

Storage Shed

The pitched roof area appeared to be in fair to good overall condition. These types of roof covering have a typical EUL of 20 to 25-years and based on observed conditions and roof material ages we anticipate that the roof will require mid-term replacement. However, the cost for this work will fall below the threshold of \$500 and therefore it has not been included within this cost study.

**B3020 ROOF OPENINGS**

B3021 Glazed Roof Openings

Restrooms

The skylights appeared to be in fair condition and should remain serviceable throughout the study period. We recommend that they are inspected when the roofing system is replaced.

**PROJECTED EXPENDITURES**

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Restrooms

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
B2011	Exterior Wall Construction	Repaint exterior wall surfaces, windows and doors	350	SF	\$3.25	\$1,138	2013	5
B2011	Exterior Wall Construction	Repaint exterior wall surfaces, windows and doors	350	SF	\$3.25	\$1,138	2017	5
B2011	Exterior Wall Construction	Repaint exterior wall surfaces, windows and doors	350	SF	\$3.25	\$1,138	2021	5
B2031	Other Doors & Entrances	Install door hardware	7	EACH	\$224	\$1,568	2014	3
B3011	Roof Finishes	Replace the roof covering	759	SF	\$6.75	\$5,123	2019	3
Total Anticipated Expenditure for B Shell						\$10,104		

Storage Shed

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
B2011	Exterior Wall Construction	Repair exterior siding	25	SF	\$30.00	\$750	2013	3
B2011	Exterior Wall Construction	Repaint exterior wall surfaces, windows and doors	375	SF	\$3.25	\$1,219	2013	5
B2011	Exterior Wall Construction	Repaint exterior wall surfaces, windows and doors	375	SF	\$3.25	\$1,219	2017	5
B2011	Exterior Wall Construction	Repaint exterior wall surfaces, windows and doors	375	SF	\$3.25	\$1,219	2021	5
Total Anticipated Expenditure for B Shell						\$4,406		

## SECTION 4 - C INTERIORS

### C10 INTERIOR CONSTRUCTION

#### DESCRIPTION

#### C1010 PARTITIONS

##### Restrooms

##### C1011 Fixed Partitions

The building contained 8" thick concrete masonry unit partitions. The partitioning was present to separate the various rooms within the building.

##### C1014 Site Built Toilet Partitions

The men's and women's restroom areas contained steel framed toilet partitions with acrylic panels (reference Photograph 9 in Appendix B).

#### CONDITION

#### C1010 PARTITIONS

##### Restrooms

##### C1011 Fixed Partitions

The interior fixed partitions all appeared to be in fair to good condition. There were no deficiencies found in relation to the wall structures. The fixed partitions are suitable for the current use.

##### C1014 Site Built Toilet Partitions

The toilet partitions all appeared to be in fair to good condition. There were no deficiencies found in relation to the partition structures. The toilet partitions are suitable for the current use.



**C30 INTERIOR FINISHES**

**DESCRIPTION**

**C3010 WALL FINISHES**

C3012 Wall Finishes to Interior Walls

Restrooms

The interior walls at the building generally contained unfinished concrete masonry units (reference Photograph 9 in Appendix B).

Storage Shed

The interior walls at each of the building generally consisted of the unfinished perimeter wall framing and sheathing system.

**C3020 FLOOR FINISHES**

Restroom & Storage Shed

C3024 Flooring

The flooring at building interiors consisted of the unfinished concrete slab-on grade.

**C3030 CEILING FINISHES**

C3031 Ceiling Finishes

Restrooms

The ceiling at the building consisted of the painted exposed roof framing and sheathing components.

Storage Shed

The ceiling at the building consisted of the unfinished exposed roof framing and sheathing components.



## CONDITION

### C3010 WALL FINISHES

#### C3012 Wall Finishes to Interior Walls

Interior wall finishes appeared to be in fair to good condition generally throughout the buildings. The interior walls are unfinished and therefore their refinishing is not included.

### C3020 FLOOR FINISHES

#### C3024 Flooring

The concrete floors appeared to be in fair condition throughout the buildings. The floors should remain serviceable throughout the study period.

### C3030 CEILING FINISHES

#### C3031 Ceiling Finishes

##### Restrooms

The painted roof framing and sheathing appeared to be in fair to good condition. Painted surfaces usually have a typical EUL of five-years, and therefore we have recommended mid-term repainting of the ceilings

##### Storage Shed

The unfinished roof framing and sheathing appeared to be in fair to good condition. We anticipate that they will not need repairs during the cost study period.

**PROJECTED EXPENDITURES**

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Restrooms

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	700	SF	\$3.25	\$2,275	2014	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	700	SF	\$3.25	\$2,275	2018	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	700	SF	\$3.25	\$2,275	2022	5
Total Anticipated Expenditure for C Interiors						\$6,825		

Storage Shed

No projected expenditures are identified for C Interiors during the study period.

## SECTION 5 - D SERVICES

### D20 PLUMBING

#### DESCRIPTION

### D2010 PLUMBING FIXTURES

#### Restrooms

#### D2011 Water Closets

The building contained floor mounted stainless steel tank-less water closets with manual flush valves within the men's and women's restrooms (reference Photograph 10 in Appendix B).

#### D2012 Urinals

The building contained stainless steel urinals with manual flush valves within the men's restroom (reference Photograph 11 in Appendix B).

#### D2013 Lavatories

The building contained wall mounted stainless steel lavatories (reference Photograph 12 in Appendix B). The lavatories generally consisted of single-handle lever type, non-metering faucets. Water is supplied via copper pipe work and drained through cast iron pipe work and fittings.

### D2020 DOMESTIC WATER DISTRIBUTION

#### Restrooms

#### D2021 Cold Water Service

Cold water piping throughout the building consisted of a copper pipe system. We believe the cold water service for the facility is supplied directly from the street pressure. Taps are made to the water line downstream of the meter and routed to plumbing fixtures and equipment via copper pipe work. The water enters the facility at the south elevation.

### D2030 SANITARY WASTE

#### D2031 Waste Piping

#### Restrooms

Waste piping observed at the building consisted of 2" to 3" diameter cast iron (reference Photograph 13 in Appendix B).

## CONDITION

### D2010 PLUMBING FIXTURES

#### Restrooms

##### D2011 Water Closets

The water closets and flush valves appeared to be in good condition. The water closets contained water saving flush valves that operated properly, therefore based upon observed conditions and with a typical EUL of 35 years, we anticipate that there will be no requirement for their replacement during the study period. The restrooms contained ADA compliant water closets.

##### D2012 Urinals

The urinals appeared to be in good condition. The urinals and flush valves appeared to be in good condition. The urinals contained water saving flush valves that operated properly, therefore based upon observed conditions and with a typical EUL of 35 years, we anticipate that there will be no requirement for their replacement during the study period. The restrooms contained ADA compliant urinals.

##### D2013 Lavatories

The lavatories and faucets at each of the buildings appeared to be in fair to good condition. The sinks drained properly, therefore based upon observed conditions and with a typical EUL of 35 years, we anticipate that there will be no requirement for their replacement during the study period. The lavatories appeared to be ADA compliant and have water saving faucets installed.

### D2020 DOMESTIC WATER DISTRIBUTION

#### Restrooms

##### D2021 Cold Water Service

The domestic water systems appeared to be in good condition. No major problems were observed that could be attributed to age and deferred maintenance.

D30 HVAC

DESCRIPTION

D3040 AIR DISTRIBUTION SYSTEMS

Restrooms

D3041 Exhaust Ventilation Systems

The ventilation system at the building was limited to the four window grates along the front and rear elevations.

CONDITION

D3040 AIR DISTRIBUTION SYSTEMS

Restrooms

D3041 Exhaust Ventilation Systems

No visually apparent problems with the ventilation system were observed at the building. No issues have been reported regarding performance; therefore we believe the system will provide adequate ventilation

**D50 ELECTRICAL**

**DESCRIPTION**

The following information was obtained through our visual observations of each of the building systems. The electrical systems include the service entrance equipment, panel boards, safety switches, motor controls, lighting fixtures, and security systems.

**D5010 ELECTRICAL SERVICE & DISTRIBUTION**

D5012 Low Tension Service & Dist.

The facility is serviced by a 400-amp, 277/480-Volt, 3-phase, 4-wire metered panel which is located in a mechanical closet in the restroom building (reference Photograph 14 in Appendix B).

**D5020 LIGHTING & BRANCH WIRING**

D5021 Branch Wiring Devices

The branch wiring devices at the buildings included switches, receptacles and other devices that would be generally associated with these types of buildings. Branch wiring was observed to typically be distributed in Electric Metallic Tubing (EMT) and flexible metal conduit.

*Restrooms*

D5022 Lighting Equipment

The interior lighting within the building is provided by surface mounted 4' fluorescent fixtures. The florescent fixtures all contained T8 lamps and electronic ballasts. All of the in-room lighting is controlled via local switching in the respective rooms.

**CONDITION**

**D5010 ELECTRICAL SERVICE AND DISTRIBUTION**

D5012 Low Tension Service & Dist.

The electrical equipment was noted to be in fair condition. Electrical distribution systems generally have a typical EUL of thirty-years, however the panels appear to be in good condition and well maintained and due to observed conditions and an estimated remaining life of over 15-years we anticipate that there will be no replacement actions required during the study period. Individual panels at the building are also anticipated to be serviceable throughout the study period.



## D5020 LIGHTING & BRANCH WIRING

### D5021 Branch Wiring Devices

The general receptacles and wiring appeared to be in fair condition within the buildings. We do not anticipate a requirement for their replacement during the cost study period.

#### Restroom

### D5022 Lighting Equipment

The interior lighting was observed in to be in fair to good fair to good condition and all fixtures were operating properly with no broken lenses or deteriorated housings. No actions will be generated during the study period and we anticipate the light fixtures will be replaced on an as needed basis. The lighting is controlled by motion sensor type controls.

## PROJECTED EXPENDITURES

No projected expenditures are identified for D Services during the study period.



**SECTION 7 - G BUILDING SITEWORK**

**G20 SITE IMPROVEMENTS**

In addition to the buildings located at the site, we have also undertaken a cursory review and assessment of the major site assets to further assist the City in understanding the condition of the site overall. The FCI calculations which are located in the Executive Summary do not include any likely cost that has been shown in this section.

**DESCRIPTION**

**G2020 PARKING LOTS**

G2021 Bases and Sub-Bases

The main facility parking lot is located at the northern end of the site and can be accessed from Parkview Avenue to the north (reference Photographs 15 in Appendix B). The parking lot and paving around the site has an asphalt surface with white line striping denoting areas of parking stalls. We were not provided with the original specification details of the paving and therefore cannot comment on the specific asphalt mix type, classification or its suitability for its existing use. Table G20-1 provides a summary of the site systems.

**Table G20-1 Schedule of Site Systems**

System Type	System Surface	Location	Measurement	No. of Parking Spaces	No. of Disabled Parking Spaces
Drive Aisle and Parking	Asphalt	North Parking Lot	1,700 SY	33*	2

\* Including ADA Parking Spaces.

**G2030 PEDESTRIAN PAVING**

G2031 Paving & Surfacing

The site contained cast-in-place concrete walkways throughout including at the perimeter of the building and along eastern edge of the soccer field enclosure (reference Photograph 16 in Appendix B).



## G2040 SITE DEVELOPMENT

### G2041 Fences & Gates

The soccer field was surrounded by 12' in height chain link fence at the north east and west perimeter with 10' high chain link fencing at the southern end of the field (reference Photograph 17 in Appendix B). The perimeter of the restroom area was enclosed by 6' high chain link fencing. The playground is enclosed by a 4' high anodized aluminum fence.

### G2042 Retaining Walls

There are variable height concrete masonry unit retaining walls with a decorative surface located at the southern and northern ends of the soccer field and at the rear of the restroom building (reference Photographs 18 in Appendix B).

### G2044 Signage

Metal property identification signage is located at north end of the field and is mounted on the fencing.

### G2045 Site Furnishings

There are several picnic tables located in the picnic area along the eastern end of the site. The tables are typically constructed of concrete or vinyl coated metal (reference Photograph 19 in Appendix B).

### G2047 Playing Fields

There is one playground structure at the site. The playground is located at the eastern section of the site adjacent to the picnic area (reference Photograph 20 in Appendix B). The playground is comprised of metal and composite equipment. The ground surface at the play area is covered with synthetic mulch.

### G2049 Miscellaneous Structures

The site contained a concrete masonry framed dumpster enclosure at the northern end adjacent to the restrooms. The enclosure has a wood roof and wood gates (reference Photograph 21 in Appendix B). The steel and wood framed pavilion contained a tubular steel framed gazebo at the west side of the site.

## G2050 LANDSCAPING

### G2056 Planters

Landscaping consisted of shrubs and ground cover, with a number of mature trees located in CMU and concrete planters at the front of the building.



## G2057 Irrigation Systems

The landscape areas throughout the site are irrigated via a below grade automatic irrigation system. The irrigation system is supplied recycled water by below grade PVC piping and a controller located in the storage shed. Above ground sprinkler heads are scattered throughout the site.

# CONDITION

## G2020 PARKING LOTS

### G2021 Bases and Sub-Bases

The asphalt paved areas throughout the main site appeared to be in fair condition. All areas of the asphalt should undergo asphaltic-based seal coat and the re-application of surface markings every three-years to extend the life of the pavements beginning in year one.

## G2030 PEDESTRIAN PAVING

### G2031 Paving & Surfacing

The walkways were in fair to good condition with no issues observed and no reported instances of disrepair. We do not anticipate replacement during the study period.

## G2040 SITE DEVELOPMENT

### G2041 Fences & Gates

The majority of the fences throughout the facility appeared to be in fair condition with no issues observed and no reported instances of disrepair. However, the fencing at the northern and western perimeter of the soccer field is damaged, apparently from the continued kicking of soccer balls into the fence. Therefore we have recommended repair of the damaged fencing at the soccer field. During the study period the perimeter fence will require repainting and a middle rail added. We have included for these expenditures in the study period.

### G2042 Retaining Walls

The retaining walls appeared to be in fair condition with no issues observed and no reported instances of disrepair. We do not anticipate replacement during the study period.

### G2044 Signage

The signage appeared to be in fair overall condition. We understand that there is a requirement for standardizing all of the monument signage at each of the parks; therefore we have included for new signage at each of the parks to meet these requirements.

#### G2045 Site Furnishings

The picnic tables throughout the site appeared to be in fair overall condition. However, one of the metal tables is deteriorated and will require replacement during the term. However, replacement of the table will fall below the threshold of \$500 and therefore has not been included within this cost study. Future repairs should be addressed on an as-needed basis as part of routine maintenance and funded as an operational expense.

#### G2047 Playing Fields

The playground equipment is in good overall condition. The equipment is approximately five years of age and we do not anticipate replacement during the study period.

#### G2049 Miscellaneous Structures

The dumpster enclosure is in good overall condition. Future repairs should be addressed on an as-needed basis as part of routine maintenance and funded as an operational expense.

### G2050 LANDSCAPING

#### G2056 Planters

The planted materials are in fair to good overall condition. The plant materials will require routine maintenance and replacement and should be addressed on an as-needed basis as part of routine maintenance and funded as an operational expense.

#### G2057 Irrigation Systems

The irrigation system at the park is in good condition. No issues were observed and no reported instances of disrepair. We do not anticipate replacement during the study period.

**G40 SITE ELECTRICAL UTILITIES**

**DESCRIPTION**

**G4020 SITE LIGHTING**

**G4021 Fixtures & Transformers**

Exterior lighting at the restroom building consisted of building mounted fluorescent lights above the men's and women's restroom entrances.

Exterior lighting along the perimeter of the soccer field consisted of pole mounted metal halide fixtures mounted on galvanized steel poles approximately 50' in height (reference Photograph 23 in Appendix B). The lights contained various amounts of fixtures each. Additional exterior lighting also includes seven pole mounted lights at the parking area (reference Photograph 24 in Appendix B).

**CONDITION**

**G4020 SITE LIGHTING**

**G4021 Fixtures & Transformers**

The building mounted lights are reported to be in poor to fair condition. The pole mounted light fixtures are substandard and inadequate for purpose. Many of the lamp access hinges, lens and latches are in varying states of deterioration, with ballasts failing. We have included for their replacement during the study period.

**PROJECTED EXPENDITURES**

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
G2021	Bases and Sub-Bases	Crack repair, seal coating and re-stripping at the parking lot	1,700	SY	\$1.50	\$2,550	2014	3
G2021	Bases and Sub-Bases	Crack repair, seal coating and re-stripping at the parking lot	1,700	SY	\$1.50	\$2,550	2017	3
G2021	Bases and Sub-Bases	Crack repair, seal coating and re-stripping at the parking lot	1,700	SY	\$1.50	\$2,550	2020	3
G2041	Fences and Gates	Repair the soccer field chain link fence	1	LS	\$4,500	\$4,500	2013	3
G2041	Fences and Gates	Repaint the soccer field chain link fence and add middle rail	1	LS	\$45,000	\$45,000	2017	3
G2044	Signage	Replace monument signage	1	EACH	\$1,000	\$1,000	2014	5
G4021	Fixtures & Transformers	Replace light fixtures at the soccer field	20	EACH	\$750	\$15,000	2018	3
G4021	Fixtures & Transformers	Replace light poles at soccer field	4	EACH	\$2,800	\$11,200	2018	3
G4021	Fixtures & Transformers	Replace light fixtures at the parking lot	20	EACH	\$540	\$10,800	2018	3
G4021	Fixtures & Transformers	Replace light poles at parking lot	8	EACH	\$2,300	\$18,400	2018	3
Total Anticipated Expenditure for G Building Sitework						\$113,550		

**Appendix A**  
Ten-Year  
Expenditure Forecast  
2013 - 2022

10 YEAR EXPENDITURE FORECAST

Manhattan Village Soccer Field - Restrooms  
 1300 Parkview Avenue  
 Manhattan Beach, CA  
 Rev A



Element No.	Component Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Plan Type	Priority	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total	Combined Total			
						\$			1	2	3	4	5	6	7	8	9	10	Deferred	Scheduled				
<b>A. SUBSTRUCTURE</b>									Deferred	Scheduled	Deferred	Scheduled												
<b>A. SUBSTRUCTURE SUB-TOTALS</b>									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>B. SHELL</b>																								
B2011	Repaint exterior wall surfaces, windows and doors	4	0	350.00	SF	\$3.25	Deferred Maintenance	5	\$1,138	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,138	\$0	\$1,138			
B2011	Repaint exterior wall surfaces, windows and doors	4	4	350.00	SF	\$3.25	Routine Maintenance	5	\$0	\$0	\$0	\$0	\$1,138	\$0	\$0	\$0	\$1,138	\$0	\$0	\$2,275	\$2,275			
B2031	Install door hardware	N/A	1	7.00	EACH	\$224.00	Capital Renewal	3	\$0	\$1,568	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,568	\$1,568			
B3011	Replace the roof covering	25	6	759.00	SF	\$6.75	Capital Renewal	3	\$0	\$0	\$0	\$0	\$0	\$0	\$5,123	\$0	\$0	\$0	\$0	\$5,123	\$5,123			
<b>B. SHELL SUB-TOTALS</b>									\$1,138	\$1,568	\$0	\$0	\$1,138	\$0	\$5,123	\$0	\$1,138	\$0	\$1,138	\$8,966	\$10,104			
<b>C. INTERIORS</b>																								
C3012	Repaint interior wall and ceiling surfaces	4	1	700.00	SF	\$3.25	Routine Maintenance	5	\$0	\$2,275	\$0	\$0	\$0	\$2,275	\$0	\$0	\$0	\$2,275	\$0	\$6,825	\$6,825			
<b>C. INTERIORS SUB-TOTALS</b>									\$0	\$2,275	\$0	\$0	\$0	\$2,275	\$0	\$0	\$2,275	\$0	\$6,825	\$6,825				
<b>D. SERVICES</b>																								
<b>D. SERVICES SUB-TOTALS</b>									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
<b>E. EQUIPMENT &amp; FURNISHING</b>																								
<b>E. EQUIPMENT &amp; FURNISHING SUB-TOTALS</b>									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
<b>F. SPECIAL CONSTRUCTION AND DEMOLITION</b>																								
<b>F. SPECIAL CONSTRUCTION AND DEMOLITION SUB-TOTALS</b>									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
<b>G. BUILDING SITEWORK</b>																								
<b>G. BUILDING SITEWORK SUB-TOTALS</b>									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Z. GENERAL</b>																								
<b>Z. GENERAL SUB-TOTALS</b>									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Expenditure Totals per Year</b>									\$1,138	\$3,843	\$0	\$0	\$1,138	\$2,275	\$5,123	\$0	\$1,138	\$2,275	\$1,138	\$2,275	\$1,138	\$15,791	\$16,929	
<b>Total Cost (Inflated @ 4% per Yr.)</b>									\$1,138	\$3,997	\$0	\$0	\$1,331	\$2,768	\$6,483	\$0	\$1,557	\$3,238	\$1,138	\$3,238	\$1,138	\$19,373	\$20,510	

10 YEAR EXPENDITURE FORECAST

Manhattan Village Soccer Field - Storage Shed  
 1300 Parkview Avenue  
 Manhattan Beach, CA  
 Rev A



Element No.	Component Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Plan Type	Priority	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total	Combined Total
						\$			1	2	3	4	5	6	7	8	9	10			
									Deferred	Scheduled	Deferred	Scheduled									
<b>A. SUBSTRUCTURE</b>																					
A. SUBSTRUCTURE SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>B. SHELL</b>																					
B2011	Repair the exterior siding	N/A	0	25.00	SF	\$30.00	Deferred Maintenance	3	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$750
B2011	Repaint exterior wall surfaces, windows and doors	4	0	375.00	SF	\$3.25	Deferred Maintenance	5	\$1,219	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,219	\$0	\$1,219
B2011	Repaint exterior wall surfaces, windows and doors	4	4	375.00	SF	\$3.25	Routine Maintenance	5	\$0	\$0	\$0	\$0	\$1,219	\$0	\$0	\$0	\$1,219	\$0	\$0	\$2,438	\$2,438
B. SHELL SUB-TOTALS									\$1,969	\$0	\$0	\$0	\$1,219	\$0	\$0	\$0	\$1,219	\$0	\$1,969	\$2,438	\$4,406
<b>C. INTERIORS</b>																					
C. INTERIORS SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>D. SERVICES</b>																					
D. SERVICES SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>E. EQUIPMENT &amp; FURNISHING</b>																					
E. EQUIPMENT & FURNISHING SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>F. SPECIAL CONSTRUCTION AND DEMOLITION</b>																					
F. SPECIAL CONSTRUCTION AND DEMOLITION SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>G. BUILDING SITEWORK</b>																					
G. BUILDING SITEWORK SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>Z. GENERAL</b>																					
Z. GENERAL SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Expenditure Totals per Year									\$1,969	\$0	\$0	\$0	\$1,219	\$0	\$0	\$0	\$1,219	\$0	\$1,969	\$2,438	\$4,406
Total Cost (Inflated @ 4% per Yr.)									\$1,969	\$0	\$0	\$0	\$1,426	\$0	\$0	\$0	\$1,668	\$0	\$1,969	\$3,094	\$5,062

10 YEAR EXPENDITURE FORECAST

Manhattan Village Soccer Field - Site Systems  
 1300 Parkview Avenue  
 Manhattan Beach, CA  
 Rev A



Element No.	Component Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Plan Type	Priority	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total	Combined Total				
						\$			1	2	3	4	5	6	7	8	9	10	Deferred	Scheduled					
A. SUBSTRUCTURE																									
A. SUBSTRUCTURE SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
B. SHELL																									
B. SHELL SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
C. INTERIORS																									
C. INTERIORS SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
D. SERVICES																									
D. SERVICES SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
E. EQUIPMENT & FURNISHING																									
E. EQUIPMENT & FURNISHING SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
F. SPECIAL CONSTRUCTION AND DEMOLITION																									
F. SPECIAL CONSTRUCTION AND DEMOLITION SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
G. BUILDING SITEWORK																									
G2021	Crack repair, seal coating and re-striping at the parking lot	3	1	1,700.00	SY	\$1.50	Routine Maintenance	3	\$0	\$2,550	\$0	\$0	\$2,550	\$0	\$0	\$2,550	\$0	\$0	\$0	\$7,650	\$7,650				
G2041	Repair the soccer field chain link fence	15	1	1.00	LS	\$4,500.00	Deferred Maintenance	3	\$4,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,500	\$0	\$4,500				
G2041	Repair the soccer field chain link fence and add middle rail	15	4	1.00	LS	\$45,000.00	Capital Renewal	3	\$0	\$0	\$0	\$0	\$45,000	\$0	\$0	\$0	\$0	\$0	\$0	\$45,000	\$45,000				
G2044	Replace the monument signage	10	1	1.00	EACH	\$1,000.00	Capital Renewal	3	\$0	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$1,000				
G4021	Replace the light fixtures at the soccer field	15	5	20.00	EACH	\$750.00	Capital Renewal	3	\$0	\$0	\$0	\$0	\$0	\$15,000	\$0	\$0	\$0	\$0	\$0	\$15,000	\$15,000				
G4021	Replace light poles at soccer field	15	5	4.00	EACH	\$2,800.00	Capital Renewal	3	\$0	\$0	\$0	\$0	\$0	\$11,200	\$0	\$0	\$0	\$0	\$0	\$11,200	\$11,200				
G4021	Replace light fixtures at the parking lot	15	5	20.00	EACH	\$540.00	Capital Renewal	3	\$0	\$0	\$0	\$0	\$0	\$10,800	\$0	\$0	\$0	\$0	\$0	\$10,800	\$10,800				
G4021	Replace light poles at the parking lot	15	5	8.00	EACH	\$2,300.00	Capital Renewal	3	\$0	\$0	\$0	\$0	\$0	\$18,400	\$0	\$0	\$0	\$0	\$0	\$18,400	\$18,400				
G. BUILDING SITEWORK SUB-TOTALS									\$4,500	\$3,550	\$0	\$0	\$47,550	\$55,400	\$0	\$2,550	\$0	\$0	\$4,500	\$109,050	\$113,550				
Z. GENERAL																									
Z. GENERAL SUB-TOTALS									\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Expenditure Totals per Year									\$4,500	\$3,550	\$0	\$0	\$47,550	\$55,400	\$0	\$2,550	\$0	\$0	\$4,500	\$109,050	\$113,550				
Total Cost (Inflated @ 4% per Yr.)									\$4,500	\$3,692	\$0	\$0	\$55,627	\$67,403	\$0	\$3,356	\$0	\$0	\$4,500	\$130,077	\$134,577				

# Appendix B

## Photographs



Photograph No. 1

View of the restroom building.



Photograph No. 2

View of the storage shed.



Photograph No. 3

View of the roof framing system.



**Photograph No. 4**

View of the restroom exterior finishes.



**Photograph No. 5**

View of the window grates and exterior door at the restroom.



**Photograph No. 6**

View of the damage to the storage shed siding,



**Photograph No. 7**

View of pitched roof and a skylight at the restroom..



**Photograph No. 8**

View of the storage shed roof.



**Photograph No. 9**

View of the interior and toilet partitions.



**Photograph No. 10**

View of a water closet.



**Photograph No. 11**

View of a men's room urinal.



**Photograph No. 12**

View of a typical lavatory.



Photograph No. 13

View of the sanitary waste piping.



Photograph No. 14

View of the main electrical supply.



Photograph No. 15

View of the parking area.



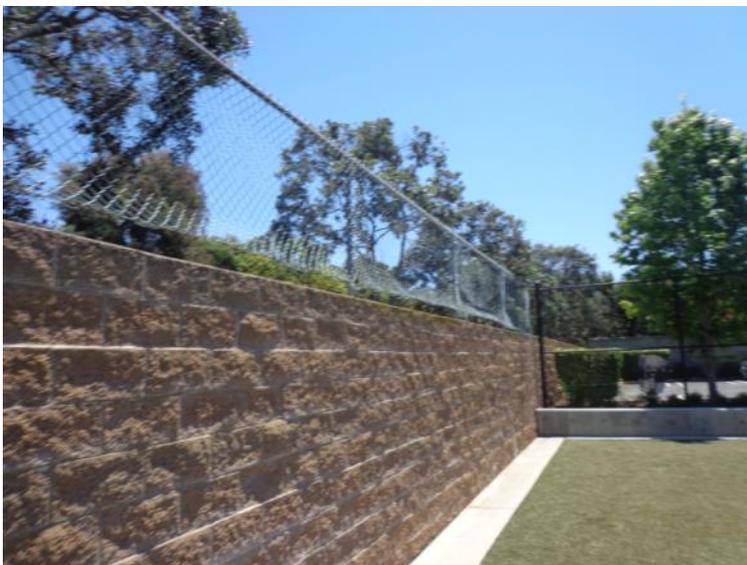
**Photograph No. 16**

View of a typical concrete walkway.



**Photograph No. 17**

View of the typical chain link fencing.



**Photograph No. 18**

View of a typical retaining wall.



**Photograph No. 19**

View of the picnic area.



**Photograph No. 20**

View of the playground.



**Photograph No. 21**

View of the dumpster enclosure.



**Photograph No. 22**

View of the fire hose cabinet.



**Photograph No. 23**

View of one of the soccer field light.



**Photograph No. 24**

View of a parking area light.

# Appendix C

## Asset Inventory

**ASSET INVENTORY**



**G40 SITE ELECTRICAL UTILITIES**

<b>Location</b>	<b>Equipment Type</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Capacity / Rating</b>	<b>Year</b>
Restrooms	Main Panelboard	Square D	81839-A	Unknown	277/480 V 400 Amp	Unknown
Restrooms	Panels	Square D	Unknown	Unknown	200 Amp 12/480 V	Unknown
Shed	Light Controls	Wire Guard Systems	Unknown	Unknown	Unknown	Unknown

# **Appendix D**

## Document Review and Warranty Information



## **DOCUMENT REVIEW & WARRANTY INFORMATION**

In addition to the completion of our visual evaluation, Faithful+Gould interviewed the various representatives from the City of Manhattan Beach (where possible), and reviewed the following documentation:

Plans for Manhattan Village Park dated 1984  
Recreation Plans for Manhattan Village Park undated

# Appendix E

Environmental Report:  
Asbestos & Lead-Based Paint





## **LIMITED ASBESTOS & LEAD-BASED PAINT ASSESSMENT REPORT**

### **Presented To:**

Faithful & Gould  
3400 North Central Avenue  
Suite 2400  
Pheonix, AZ 85014

### **Assessment Location:**

Manhattan Village Soccer Field  
1800 Parkview Avenue.  
Manhattan Beach, CA. 90266

Andersen Environmental Project No. 1304-584

Report Date: June 6, 2013

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4.0 INSPECTOR'S QUALIFICATIONS .....	4
5.0 TESTING PROTOCOL.....	4
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8.0 RECOMMENDATIONS.....	6
9.0 RENOVATION, REPAIR AND PAINTING (RRP) RULE.....	7
10.0 INSPECTION LIMITATIONS .....	7

## APPENDICES

APPENDIX A	ASBESTOS ANALYTICAL RESULTS
APPENDIX B	XRF RESULTS
APPENDIX C	INSPECTOR'S CERTIFICATIONS
APPENDIX D	MAPS / FLOOR PLANS
APPENDIX E	DHS FORM 8552

## 1.0 INTRODUCTION

This report presents the results of Andersen Environmental's Limited Asbestos & Lead-Based Paint Assessment of the restroom facilities and a small storage shed located at 1800 Parkview Avenue., Manhattan Beach, CA 90266 (referred to hereunder as the subject property). This document is prepared for the sole use of The City of Manhattan Beach and any regulatory agencies that are directly involved in this project. No other party should rely on the information contained herein without prior written consent of The City of Manhattan Beach scope of services, inspection methodology, and results are presented below.

## 2.0 SCOPE OF WORK

The purpose of this inspection and survey is to identify the Asbestos Containing Materials (ACM) and Lead-Based Paint (LBP) present within the interiors and exteriors of the subject property building. As the asbestos sampling is destructive in nature, and may void any roof warranties, the roofing materials of the building were not sampled during this assessment.

### Asbestos

The purpose of this assessment was to perform bulk sampling of suspect materials in order to determine the presence or absence of ACM associated with the two buildings at the subject property. The scope of this assessment included reviewing any provided building records and/or previous investigation records, visually identifying homogeneous areas and functional spaces, collecting bulk samples of suspect ACM, interpreting the laboratory results, producing a written report of our findings, recommendations, floor plans and approximations of ACM quantities.

### Lead-Based Paint

The purpose of this assessment was to perform an X-Ray Fluorescence (XRF) survey of the two buildings onsite in order to determine which components may be covered with lead laden coatings. To comply with Title 17, EPA and HUD guidelines, painted and varnished surfaces in every accessible "room equivalent" were sampled for the presence of lead-based paint (LBP) and the condition of the painted surfaces was assessed. The intent was to ascertain the presence of LBP above the Los Angeles County action level using X-Ray Fluorescence. If LBP was found, the inspection would identify individual architectural components and their respective concentrations of lead in such a manner that this report would be used to characterize the presence of LBP at this property. The scope of work also included producing a written report of our findings and recommendations.

## 3.0 PROPERTY DESCRIPTION

The subject property consists of a single story restroom facility and a small storage shed adjacent to the Manhattan Village Soccer Field. The small storage shed is constructed of wood with wood siding and an asphalt shingled roof. The Rest room Facility is constructed with CMU block walls on a concrete slab foundation with pitched roofs finished with asphalt shingles. The interior finishes include CMU block walls, a wood framed roof canopy unfinished concrete floors.

#### 4.0 INSPECTOR'S QUALIFICATIONS

Andersen Environmental performed the lead inspection at the site using a Niton XRF spectrum analyzer instrument. Freddy Torres has completed an EPA approved curriculum in Lead in Construction Inspector / Risk Assessor Training.

Benjamin Curry and Lamont Leiva of Andersen Environmental performed the asbestos inspection at the site. Lamont Leiva is certified by the State of California Division of Occupational Safety and Health (DOSH) as Certified Site Surveillance Technician and worked under the supervision of Benjamin Curry, a DOSH Certified Asbestos Consultant.

Personnel certificates have been provided in *Appendix C*.

#### 5.0 TESTING PROTOCOL

##### Asbestos

The sampling was performed in accordance with requirements of the following regulations:

- Asbestos Hazard Emergency Response Act (AHERA); 40 CFR 763 Subpart E
- Asbestos School Hazard Abatement Reauthorization Act (ASHARA); Section 206 of the Toxic Substance Control Act
- National Emissions Standards for Hazardous Air Pollutants (NESHAPS); 40 CFR 61 Subpart M.

This report is a record of activities, observations, analytical results and recommendations performed to date.

##### Lead-Based Paint

The sampling was performed in accordance with requirements of the following regulations:

- Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing<sup>i</sup>.
- Title 17, California Code of Regulations
- EPA Lead Based Paint Program

**XRF Testing:** Testing of the painted surfaces was patterned after the inspection protocol in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing<sup>ii</sup>. In every “room equivalent” within the tested property, one representative surface of each “testing combination” was tested. Multiple readings were collected to resolve inconsistencies in the test results.

**Regulatory Compliance:** Several public (government) agencies have a published “regulatory action level” to classify LBP. To further complicate matters, some of the established “levels” are quantified in different units of measurement. Listed below are the current regulatory agencies that have defined LBP, along with the respective action level:

<u>Agency</u> (ppm <sup>iii</sup> )	<u>Ordinance #</u>	<u>Action level (mg / cm<sup>2</sup>)</u>	<u>Action level</u>
<b>HUD / EPA</b>	24 CFR 35.86 & 40 CFR 745.103	1.0 mg / cm <sup>2</sup>	5,000 ppm
<b>L.A. County</b>	Title 11, 11.28.010	0.7 mg / cm <sup>2</sup>	600 ppm <sup>iv</sup>
<b>OSHA / CAL OSHA</b>	29 CFR 1926.62 & Title 8, 1532.1	<i>Not Specified</i>	600 ppm <sup>v</sup>

HUD / EPA have recently issued the following guidance regarding units of measurement for paint samples:

“Report lead paint amounts in mg/cm<sup>2</sup> because this unit of measurement does not depend on the number of layers of non-lead-based paint and can usually be obtained without damaging the painted surface. All measurements of lead in paint should be in mg/cm<sup>2</sup>, unless the surface area cannot be measured or if all paint cannot be removed from the measured surface area. In such cases, concentrations may be reported in weight percent (%) or parts per million by weight (ppm).”<sup>vi</sup>

Furthermore, EPA has previously issued guidance on lead content classification as follows:

“... The rule, at 24 CFR 35.86 and 40 CFR 745.103 states that a lead-based paint free finding must demonstrate that the building is free of ‘paint or other surface coatings that contain lead in excess of 1.0 milligrams per square centimeter (1.0 mg / cm<sup>2</sup>) or 0.5 percent by weight (5000 ppm).’ The State standards are not applicable, whether more or less stringent, since a State cannot amend Federal requirements.”<sup>vii</sup>

In recognition of the various action levels the testing results are classified as follows for this report:

- Painted surfaces with readings at or above 0.7 mg / cm<sup>2</sup> are considered - Positive
- Painted surfaces with readings below 0.7 mg / cm<sup>2</sup> are considered - Negative

*The individual readings have been provided on all field data sheets. Any future change in action levels by one of the regulating agencies may affect the classification of results.*

For purposes of this survey, any material containing any detectable level of lead is subject to OSHA’s Lead Exposure in Construction Rule (29 CFR Part 1926). Any work that disturbs these materials must be performed in accordance with these and any other applicable standards.

## 6.0 METHOD OF TESTING

### Asbestos

No suspect materials were identified at the subject property, with exception of the roofing materials which were not sampled due to the destructive nature of the sampling.

### Lead-Based Paint

**Paint Testing:** The method employed was X-ray fluorescence (XRF) using a Niton XLp 303A by Thermo Scientific, this unit uses a radioactive source of Cadmium 109. It was calibrated to NIST standard lead concentration samples prior to and after its use. Uncoated surfaces and other bare materials were not tested. The instrument was operated in “Quick Mode,” where the duration for each test result is determined by a combination of:

- The actual reading relative to the designated action level;

- Age of the radioactive source;
- The substrate on which the test was taken.

The instrument's calibration was verified according to the manufacturer's specifications in compliance with the Performance Characteristic Sheet (PCS) developed for this instrument.

The readings from this instrument produce a 95% confidence level that the "lead" reading accurately reflects the actual level of lead in the tested surfaces, relative to the federal action level.

## 7.0 SUMMARY OF RESULTS

The following materials are presumed to contain asbestos and are considered ACM unless further sampling proves otherwise:

Material Description	Material Locations	Condition	Asbestos Percentage	Estimated Quantity*
Roofing Materials (Mastic & Felts)	Roof	Good	Presumed	1,500

\* These quantities are only approximations. The exact quantities should be measured by the abatement contractor during the bidding process.

All other suspect materials sampled during this assessment tested negative for asbestos.

### Lead-Based Paint

**Paint Sampling:** All interior and exterior materials sampled during the inspection tested negative for lead concentrations.

## 8.0 RECOMMENDATIONS

Given the clients anticipated renovation of the subject property buildings, Andersen Environmental recommends the following:

### Asbestos

If materials found to contain asbestos and/or presumed to contain asbestos are going to be disturbed or removed; by law, they must first be abated and properly disposed of by a licensed and Cal/OSHA registered asbestos abatement contractor prior to any renovation or demolition activities.

In as such that no destructive investigation has been performed during the survey, the report may not reveal concealed asbestos-containing materials. Subsequently, additional investigation including construction documents review and/or destructive investigation is recommended as a precaution to prevent accidental exposure when construction or demolition is planned for this facility. Any suspect materials that are uncovered during construction activities; that were not sampled during this assessment, should be considered asbestos containing, unless sampled to prove otherwise.

### Lead-Based Paint

All analyzed lead paints and glazes are not considered to be lead-based. However, the removal of material containing any detectable level of lead is subject to OSHA's Lead Exposure in Construction Rule (29 CFR part 1926) and Title 8, Section 1542.1 of the California Code of Regulations.

## 9.0 RENOVATION, REPAIR AND PAINTING (RRP) RULE

Anyone performing renovation, repair and painting projects that disturb painted surfaces in residences, child care facilities, and schools built before 1978 must be EPA RRP certified and follow specific lead safe work practices to prevent lead contamination. The rule applies where more than 6 square feet per room or 20 square feet outside will be "disturbed" by workers(s) being compensated.

## 10.0 INSPECTION LIMITATIONS

This Assessment was planned, developed, and implemented based on Andersen Environmental previous experience in performing asbestos and lead-based paint assessments. This inspection was patterned after Chapter 7 of the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision)* and NESHAPS; 40 CFR 61 Subpart M. Andersen Environmental utilized state-of-the-art-practices and techniques in accordance with regulatory standards while performing this assessment. Andersen Environmental evaluation of the relative risk of exposure to lead identified during this inspection/risk assessment is based on conditions observed at the time of the inspection. Andersen Environmental cannot be responsible for changing conditions that may alter the relative exposure risk or for future changes in accepted methodology. Andersen Environmental uses only qualified personnel to perform building surveys. Reasonable effort was made to survey accessible suspect materials. Additional suspect materials may be located between walls, in voids, or in other inaccessible areas; caution should be exercised regarding these areas.

Andersen Environmental cannot warrant that these buildings do not contain LBP or ACM in locations other than those identified in this report.

Enclosed are the diagram(s), actual test results, and all relevant certifications and licenses.

Survey and Report by:

Benjamin Curry  
DOSH Certified Asbestos Consultant No. 09-4549  
CDPH Certified Lead Inspector/Assessor/Supervisor No. 20747

- 
- i 1997 Revision
  - ii 1997 Revision
  - iii Parts per million
  - iv Applies to sale and application of LBP.
  - v Applies to construction related activities
  - vi Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision).
  - vii Office of Pollution Prevention and Toxics, (August 20, 1996)

# Appendix E

## Glossary of Terms

## Acronyms & Glossary of Terms

CMU	Concrete Masonry Unit
BUR	Built-Up Roof
EIFS	Exterior Insulation and Finish System
EPDM	Ethylene Propylene Diene Monomer
SC	Solid Core Doors
HM	Hollow Metal Doors
MH	Man Holes
ABC	Aggregate Base Course
EMT	Electrical Metallic Conduit
EUL	Estimated Useful Life
RUL	Recommended Useful Life
EOL	End of Life
FCI	Facility Condition Index
CRV	Current Replacement Value
DM	Deferred Maintenance
SF	Square Foot
SY	Square Yards
PSF	Pounds-Per-Square-Foot
PSI	Pounds-Per-Square-Inch
NFPA	National Fire Protection Association
FACP	Fire Alarm Control Panel
NAC	Notification Appliance Circuit
FCC	Fire Command Center
HVAC	Heating Ventilating and Air conditioning
VAV	Variable Air Volume
AHU	Main Air Handling Units
HP	Horse Power
FSS	Fuel Supply System
MDP	Main Distribution Panel
SES	Service Entrance Switchboard's
NEMA	National Electrical Manufactures Association
HID	Intensity Discharge
EMT	Electrical Metallic Tubing
KVA	kilovolt-ampere
RO	Reverse Osmosis
BTU/HR	British Thermal Units per Hour
kW	Kilowatt
FPM	Feet per Minute (Elevator Speed)
Amp	Amperage

## Acronyms & Glossary of Terms

**BTU** – British Thermal Unit; the energy required to raise the temperature of one pound of water by one degree.

**Building Envelope** - The enclosure of the building that protects the building's interior from the outside elements, namely the exterior walls, roof and soffit areas.

**Building Systems** – Interacting or independent components or assemblies, which from single integrated units, that comprise a building and its site work, such as, pavement and flatwork, structural frame, roofing, exterior walls, plumbing, HVAC, electrical, etc.

**Caulking** – Soft, putty-like material used to fill joints, seams, and cracks.

**Codes** – See building codes.

**Component** – A fully functional portion of a building system, piece of equipment, or building element.

**Deferred Maintenance** – Physical deficiencies that cannot be remedied with routine maintenance, normal operating maintenance, etc., excluding de minimis conditions that generally do not present a material physical deficiency to the subject property.

**Expected Useful Life (EUL)** – The average amount of time in years that an item, component or system is estimated to function when installed new and assuming routine maintenance is practiced.

**Facility** – All or any portion of buildings, structures, site improvements, complexes, equipment, roads, walks, passageways, parking lots, or other real or personal property located on site.

**Flashing** – A thin, impervious sheet of material placed in construction to prevent water penetration or to direct the flow of water. Flashing is used especially at roof hips and valleys, roof penetrations, joints between a roof and a vertical wall, and in masonry walls to direct the flow of water and moisture.

**Remaining Useful Life (RUL)** – A subjective estimate based upon observations, or average estimates of similar items, components, or systems, or a combination thereof, of a number of remaining years that an item, component, or system is established to be able to function in accordance with its intended purpose before warranting replacement. Such period of time is affected by the initial quality of an item, component, or system, the quality of the initial installation, the quality and amount of preventative maintenance exercised, climatic conditions, extent of use, etc.

**Thermal Resistance (R)** – A unit used to measure a material's resistance to heat transfer. The formula for thermal resistance is:  $R = \text{Thickness}(\text{in inches})/K$

**Structural Frame** – The components or building systems that support the building's nonvariable forces or weights (dead loads) and variable forces or weights (live loads).

**Warranty** – Legally enforceable assurance of quality or performance of a product or work, or of the duration of satisfactory performance. Warranty guarantee and guaranty are substantially identical in meaning; nevertheless, confusion frequently arises from supposed distinctions attributed to guarantee (or guaranty) being exclusively indicative of duration of satisfactory performance or of a legally enforceable assurance furnished by a manufacturer or other third party. The uniform commercial code provisions on sales (effective in all states except Louisiana) use warranty but recognize the continuation of the use of guarantee and guaranty.