Citywide
Facility Condition Assessment

Report of

Facility Condition Assessment

For
City of Manhattan Beach
Public Safety Building and Fire Station No. 1
400-420 15th Street, Manhattan Beach, CA

September 4, 2013
(Rev A)

Provided By:

Faithful+Gould, Inc.

Provided For:

CITY OF MANHATTAN BEACH
3621 Bell Avenue, Manhattan Beach, CA 90266
WWW.CITYMB.INFO

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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 Public Safety Building and Fire Station No. 1 located at 400 – 420 Fifteenth Street, Manhattan Beach, California (The Facility).

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 and EX-2 provide 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 15, 2013, Mr. Richard Needler 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 Building at the Facility

Assumed site boundary

BUILDING SUMMARY

Table EX-1 Facility Details

BUILDING NAME:	Public Safety Building and Fire Station No. 1		**LAT/LONG:**	33° 53' 15" N / 118° 24' 34" W	
ADDRESS:	400 - 420 15th Street Manhattan Beach, CA 90266		**OCCUPANCY STATUS:** OCCUPIED ☒ VACANT ☐ PARTIALLY ☐		
HISTORIC DISTRICT:	**YES** ☐	**NO** ☒	**HISTORIC BUILDING:**	**YES** ☐	**NO** ☒
GROSS SQUARE FOOTAGE OF BUILDING:	60,129		**GROSS SQUARE FOOTAGE OF LAND:**	99,360 (estimated)	
CURRENT REPLACEMENT VALUE:	$19,469,433		**YEAR OF CONSTRUCTION:**	2006	
			BUILDING EUL:	60 Years	
			BUILDING RUL:	53 Years	
BUILDING USE:	Administration / Fire Station		**NUMBER OF STORIES:**	2	

BUILDING DESCRIPTION

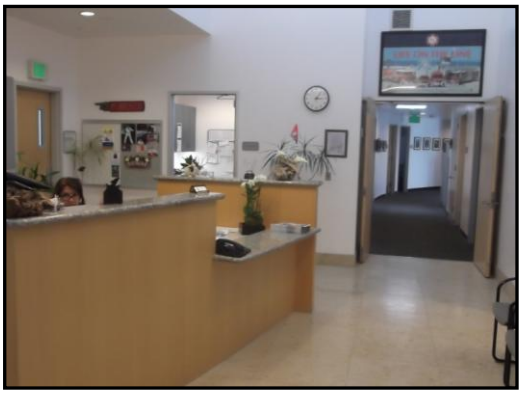
The Manhattan Beach Public Safety Building and Fire Station No. 1 is located at the southwest corner of the intersection of North Valley Drive and Fifteenth Street. The building contains the municipal police department headquarters and the municipal fire department's main fire station and was constructed between 2005 and 2006.

The building has a steel superstructure of columns and beams supported on a reinforced concrete foundation system of footings and walls; a basement level is concrete framed. The building exterior is a combination of painted cementitious stucco and brick veneer on sheathing and steel stud framing. The various low-sloped roofs contain white asphaltic built-up 3-ply membrane, with stone ballast, with sloped roof areas having pre-finished standing seam metal roofing. The elevated floors consist of corrugated metal decking topped with concrete, supported on the steel superstructure. The first floor deck is reinforced concrete, with portions also of cast-in-place reinforced concrete slabs-on-grade, as is the basement level floor. Windows are aluminum-framed double-paned fixed and awning units and doors consist of storefront-type glazed entrance doors and flush steel service doors.

The interior finishes of the building contained stone and ceramic tile, vinyl and carpet sheet floor coverings, painted, wallpapered and ceramic tiled walls and painted gypsum board or suspended acoustical tile ceilings.

Parking is provided for a total of 145 vehicles at the facility, including 11 vehicles in reserved diagonal street spaces to the south of the building along Thirteenth Street, approximately 50 vehicles on the surface level deck at the east side of the building, and an additional approximately 84 parking spaces in a single basement level located under and to the east of the building. The building's basement level garage is accessible through secured gates from the adjoining City Hall plaza parking garage.

The heating and cooling for the building is provided via a central hydronic system comprised of central chillers and cooling towers, natural-gas-fired boilers, air handling units and numerous variable air volume (VAV) units, some with hot water re-heat coils. The HVAC components are controlled via a central building automation system. Conditioned air is distributed from the air handling units to the VAV units throughout the building via metal ductwork. Domestic hot water is provided by two gas-fired boilers, storage tanks and pumps.



The electrical service is underground to two-section Eaton switchgear in the basement level's main electrical room, rated at 270/480-volts, 3-phase, 4-wire, 2,000-amps. Step down transformers also provide 208/120-volt service to distribution panels in electrical rooms on each. The interior lighting is generally provided by surface-mounted and recessed 4' long, 2-lamp, 32-watt fluorescent fixtures with T8 watt lamps and electronic ballasts.

The building contains a central fire alarm system and is protected by a wet-pipe fire sprinkler system. The building has a Honeywell intruder / security system and a Caterpillar 800 KW / 1,000 KVA diesel-fueled emergency generator. Additionally, there is one hydraulic passenger elevator serving the basement and first floor levels of the facility.

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 building. 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 were found to contain asbestos and considered ACM:

Table EX-2 Summary of Asbestos Results

Material Description	Material Location	Condition	Asbestos Percentage	Estimated Quantity*
Drywall & Joint Compound	Throughout Public Services Building	Good	>1% Chrysotile	5,656
12" Brown Vinyl Floor Tile & Mastic	Throughout Public Services Building	Good	2% Chrysotile	1,560
12" Tan Vinyl Floor Tile & Mastic	Throughout Public Services Building	Good	2% Chrysotile	956
Drywall & Joint Compound	Throughout Public Services Building	Good	2% Chrysotile	980
Roofing Materials (Penetration Mastic)	Throughout Public Services Building	Good	Presumed	500

* These quantities are only approximations

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.

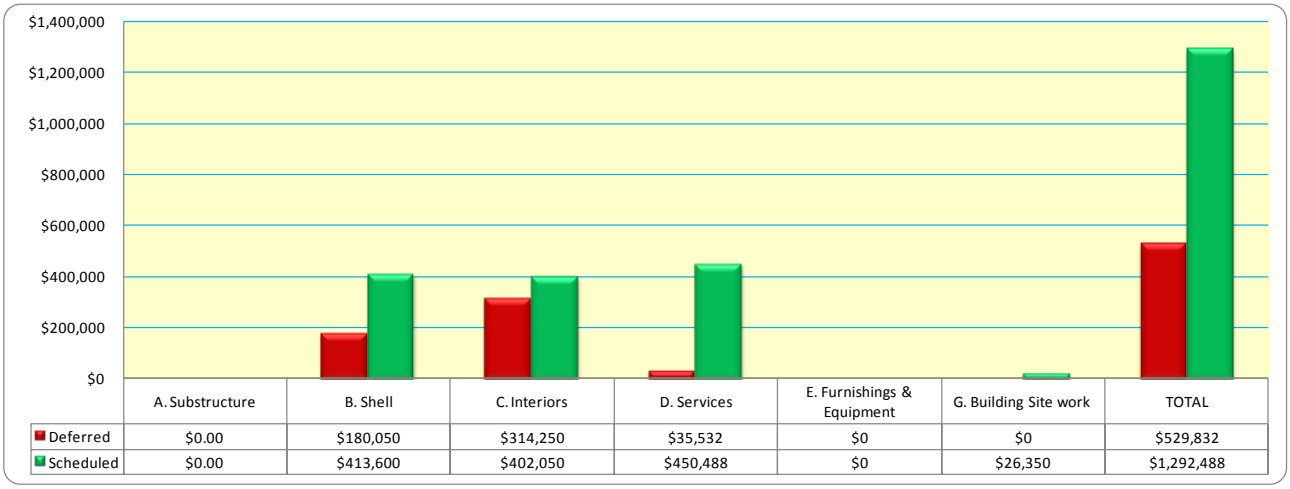
Lead-Based Paint was not identified at the building. Through sampling of several paint components the presence of LBP was indicated at or above the action level at the following locations:

- 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. Chart EX-1 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. Further details of these expenditures are included within each respective report section and within the expenditure forecast, in Appendix A of this report. The results illustrate a total anticipated expenditure over the study period of circa $1,822,320.

Chart EX-1 Building Expenditure Summary [1 & 2]



	A. Substructure	B. Shell	C. Interiors	D. Services	E. Furnishings & Equipment	G. Building Site work	TOTAL
Deferred	$0.00	$180,050	$314,250	$35,532	$0	$0	$529,832
Scheduled	$0.00	$413,600	$402,050	$450,488	$0	$26,350	$1,292,488

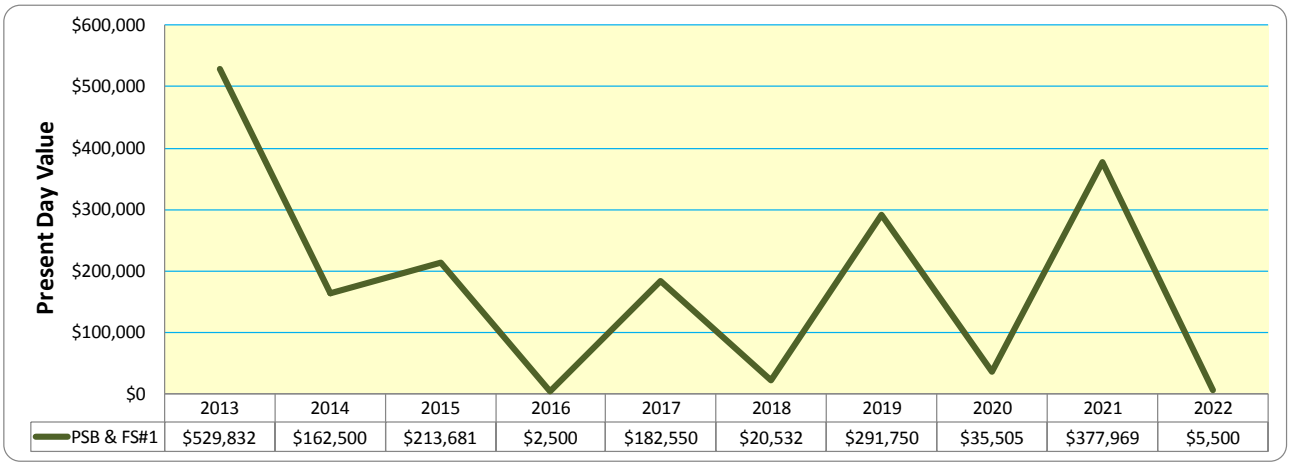
KEY FINDINGS

- B Shell: Repair stucco, replace sealants and repaint facade at an estimated cost of $180,050 in years 2013, 2017 and 2021
- B Shell: Replace motorized overhead door operators at an estimated cost of $16,000 in year 2020
- C Interiors: Repaint interior wall and ceiling surfaces at an estimated cost of $289,250 in years 2013 and 2019
- C Interiors: Replace carpeting at an estimated cost of $112,800 in year 2015
- D Services: Replace domestic water heating boiler, tank and pump at an estimated cost of $8,830 in year 2020
- D Services: Cast iron waste pipe replacement at an estimated cost of $2,500 per year from 2013 through to 2022
- D Services: HVAC system testing at an estimated cost of $96,206 in year in 2015
- D Services: Replace rooftop exhaust fans at an estimated cost of $195,419 in year in 2020
- D Services: Upgrade Direct Digital Control (DDC) control system at an estimated cost of $3,006 in year in 2021

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

Chart EX-2 illustrates a summary of yearly anticipated expenditures over the cost study period for the building. A detailed breakdown of anticipated expenditures is contained within Appendix A of this report.

Chart EX-2 Expenditure Forecast [1 & 2]



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PSB & FS#1	$529,832	$162,500	$213,681	$2,500	$182,550	$20,532	$291,750	$35,505	$377,969	$5,500

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

This chart highlights major expenditure for the building across in years 2013, 2019 and 2021 due to the following systems which are expected to reach their Estimated Useful Life (EUL) and therefore due for replacement. The line represents the total expenditure for each year and is a useful tool to indicate the magnitude of the impeding issues the building will face.

Year 2013

- Exterior repair works
- Interior repainting works

Year 2019

- Interior repainting works

Year 2021

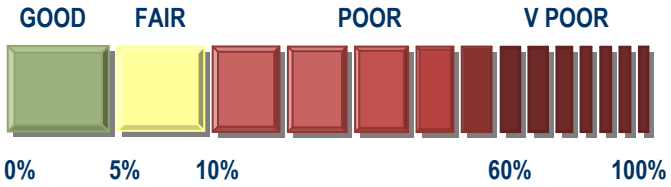
- Exterior repair works
- Upgrade of DDC system

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:

$$FCI = \frac{\text{Maintenance, Repair, and Replacement Deficiencies of the Facility(s) (DM)}}{\text{Current Replacement Value of the Facility(s) (CRV)}}$$



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-2 will help interpret the results:

Table EX-2 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-3 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 currently the building contains a GOOD facility condition index rating, however it will fall into a FAIR condition rating should required and recommended actions not be implemented.

Table EX-3 Facility Condition Index

Building Name	FCI	Gross Square Foot (GSF)	CRV per GSF	Current Replacement Value (CRV)	Deferred Maintenance Value (DM) [1 & 2]	FCI Ratio	Property Condition Rating
Public Safety Building and Fire Station No.1	Current FCI Ratio	60,129	$324	$19,469,433	$529,832	2.7%	GOOD
Public Safety Building and Fire Station No.1	Year 10 FCI Ratio	60,129	$324	$19,469,433	$1,822,320	9.4%	FAIR

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

Chart EX-3 indicates the affects of the FCI ratio per year, assuming the required funds and expenditures **ARE** made to address the identified works each year. As explained, the building has a GOOD condition rating (below 5%) at the start and during the study period and maintains this on a year by year basis.

Chart EX-3 Year by Year Effects of FCI over the Study Period

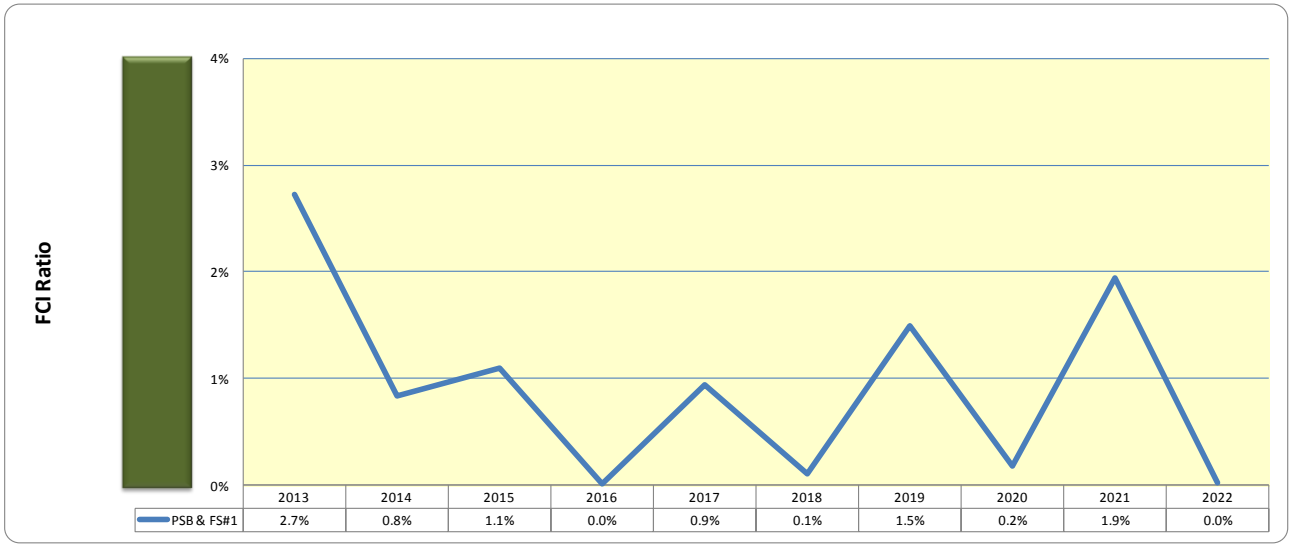
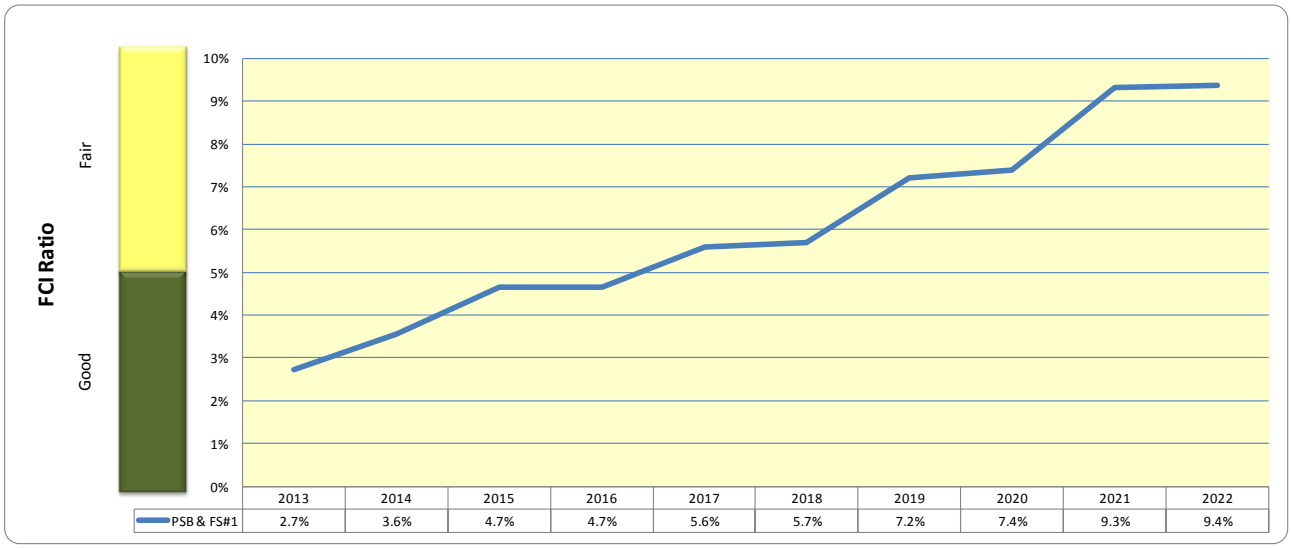


Chart EX-4 indicates the cumulative effects of the FCI ratio over the study period assuming the required funds and expenditures are **NOT** provided to address the identified works and deferred maintenance each year. The results of the study indicate at this current time the building is maintained with a facility condition index rating within the GOOD condition; however at the end of the study period, in year 2017, it will fall into the FAIR condition rating where it will remain for the rest of the study period.

Chart EX-4 Cumulative Effects of FCI over the Study Period



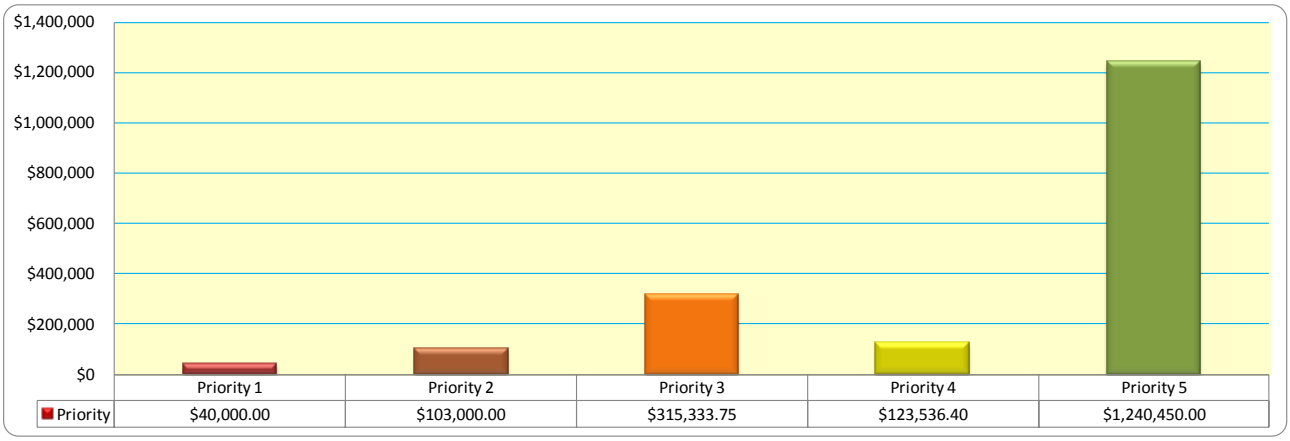
PRIORITIZATION OF WORK

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:

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

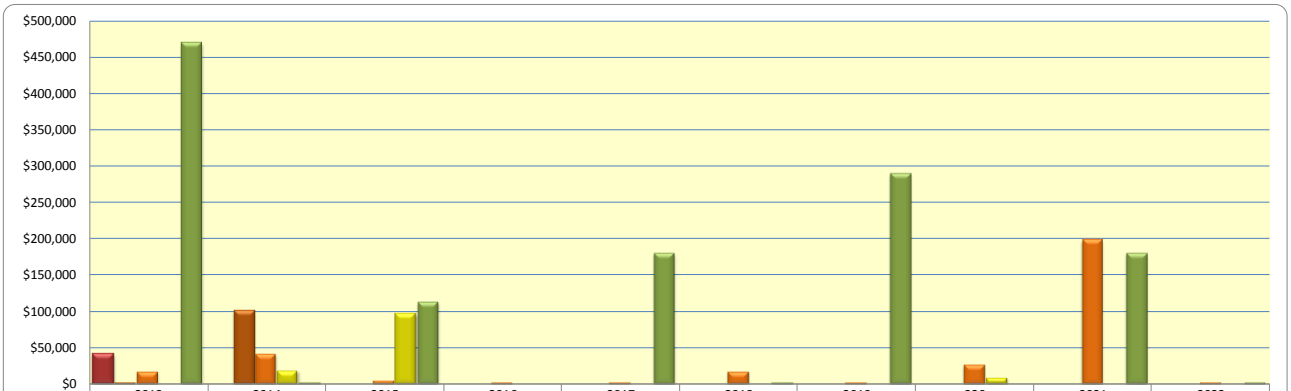
Chart EX-5 illustrates the breakdown of expenditure according the priority coding providing an opportunity to strategically plan and effectively direct funding to the highest priority.

Chart EX-5 Cumulative Prioritization of Work



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

Chart EX-6 Year by Year Cumulative Prioritization of Work



	2013	2014	2015	2016	2017	2018	2019	220	2021	2022
Priority 1	$40,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 2	$3,000	$100,000	$0	$0	$0	$0	$0	$0	$0	$0
Priority 3	$17,532	$41,000	$4,675	$2,500	$2,500	$17,532	$2,500	$26,675	$197,919	$2,500
Priority 4	$0	$18,500	$96,206	$0	$0	$0	$0	$8,830	$0	$0
Priority 5	$469,300	$3,000	$112,800	$0	$180,050	$3,000	$289,250	$0	$180,050	$3,000

Chart EX-6 illustrates that there are a number of key years for Priority 5 throughout the study period.

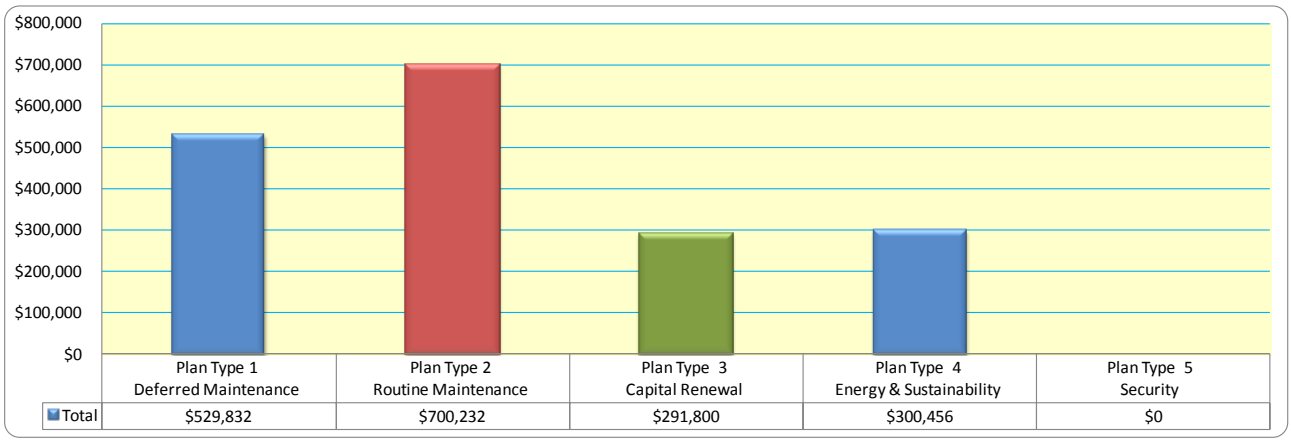
PLAN TYPES

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:

Plan Type 1 Deferred Maintenance	•Maintenance that was not performed when it was scheduled or past its useful life resulting in immediate repair or replacement
Plan Type 2 Routine Maintenance	•Maintenance that is planned and performed on a routine basis to maintain and preserve the condition
Plan Type 3 Capital Renewal	•Planned replacement of building systems that have reached the end of their useful life
Plan Type 4 Energy & Sustainability	•When the repair or replace of equipment or systems are recommended to improve energy and sustainability performance.
Plan Type 5 Security	•When a system requires replacement due to a security risk or requirement

Chart EX-7 illustrates the breakdown of expenditure according to the Plan Type or deficiency categories providing an opportunity to strategically plan and effectively direct funding.

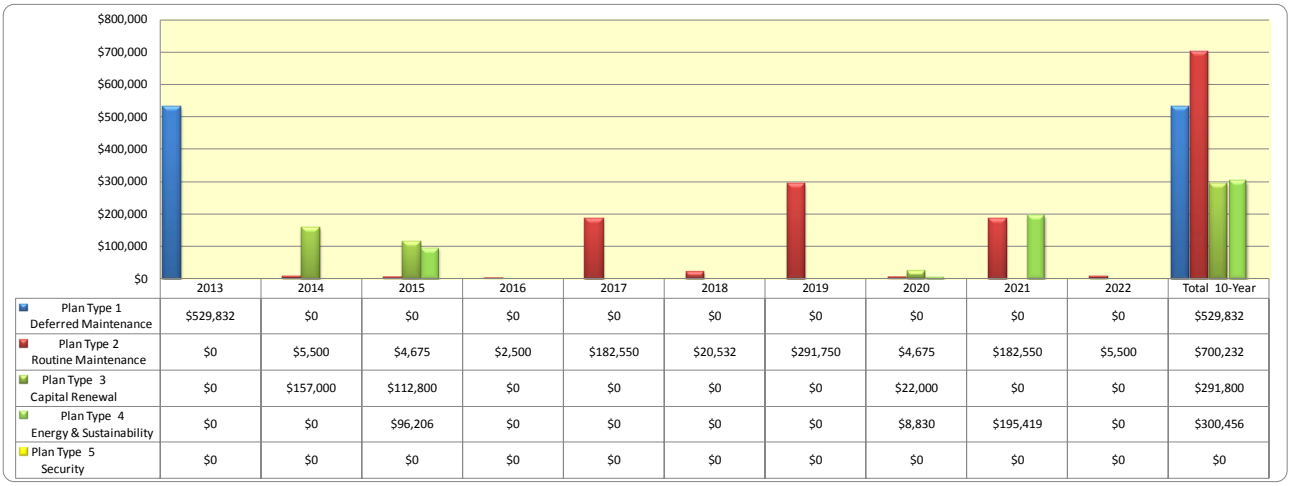
Chart EX-7 Cumulative Expenditure by Plan Type



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

Chart EX-8 illustrates the breakdown of expenditure per each year within the 10 year study period according to the Plan Type or deficiency categories.

Chart EX-8 Yearly Expenditure by Plan Type



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total 10-Year
Plan Type 1 Deferred Maintenance	$529,832	$0	$0	$0	$0	$0	$0	$0	$0	$0	$529,832
Plan Type 2 Routine Maintenance	$0	$5,500	$4,675	$2,500	$182,550	$20,532	$291,750	$4,675	$182,550	$5,500	$700,232
Plan Type 3 Capital Renewal	$0	$157,000	$112,800	$0	$0	$0	$0	$22,000	$0	$0	$291,800
Plan Type 4 Energy & Sustainability	$0	$0	$96,206	$0	$0	$0	$0	$8,830	$195,419	$0	$300,456
Plan Type 5 Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Chart EX-8 illustrates that Plan Type 2 is required mid-term in 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 and review of the available drawings.

A1010 STANDARD FOUNDATIONS

A1011 Wall Foundations

The exterior walls and interior columns at both the garage area and portions of the main building below grade are supported by steel-reinforced concrete spread footings. Structural drawings available for reference for the building indicate that the footings were designed with a compressive strength of 3,000 pounds per square inch (psi). Footings varied in reinforcement, in thickness from 12" to 24", and in width from 2' to 7'-6", based on loading conditions. Foundation walls, designed with a compressive strength of 4,000 psi, are typically 12" thick.

A1030 SLABS-ON-GRADE

A1031 Standard Slab on Grade

The floor of the garage and the lower level of a portion of the main building (the basement) consists of cast-in-place concrete slabs-on-grade, reinforced with welded wire fabric. The floor slabs are typically 5" thick, over an aggregate base. The slabs contain a thickened edge at their perimeter and at interior concrete masonry walls, with the concrete designed with a compressive strength of 3,000 psi.

CONDITION

A1010 STANDARD FOUNDATIONS

A1011 Wall Foundations

The observable portions of the building foundations (in the basement) appeared to be in good condition, with no indication of significant structural deficiency observed. We assume that the hidden reinforced concrete supports are also in good condition. Hairline cracking, efflorescence indicating minor water infiltration, was noted in several locations in the parking garage (reference Photograph 19 in Appendix B) and is reported to be an ongoing issue. These conditions should be monitored during the period of study.

A1030 SLABS-ON-GRADE

A1031 Standard Slab on Grade

The cast-in-place concrete slabs-on-grade appeared to be in good condition. Minor cracking was observed in various locations of the parking garage, but the quantity of the cracking was minimal and the cost for repairs falls below the threshold of $500. Therefore, we have not been included such costs within the expenditure forecast.

PROJECTED EXPENDITURES

There are no projected expenditures for A Substructure during the study period.

SECTION 3 - B SHELL

B10 SUPERSTRUCTURE

DESCRIPTION

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

B1010 FLOOR CONSTRUCTION

B1012 Upper Floors Construction

Most of the first floor is of two-way steel-reinforced concrete deck construction, supported on the concrete foundation walls and interior concrete columns (reference Photograph 17 in Appendix B). The construction consists of 12" to 14" concrete decks, with 4" thick sloped concrete topping slabs installed in the surface parking area to promote stormwater drainage. This concrete deck is sandwich-type construction that includes the structural first-floor-level deck covered by a waterproofing membrane, with the second topping layer of concrete poured over the membrane. The deck has expansion joint material installed at regular intervals. Structural drawings available for reference for the building indicate that the concrete decks were designed with a compressive strength of 4,000 psi.

The construction of the second floor of a portion of the fire station is of 2" to 3" corrugated steel decking topped with 2" to 2½" thick concrete reinforced with welded wire fabric. The floor decks are supported on wide-flange steel beams and columns of various sizes, based on loading requirements.

B1020 ROOF CONSTRUCTION

B1021 Flat Roof Construction

The low-sloped roof sections consist of various depths of wide-flange steel beams at the perimeter and interior, supported on steel columns, and covered with 1½" corrugated steel decking. The steel beams at the roof level typically are sloped slightly toward roof drain locations for stormwater drainage. The roof covering is described in section B30 Roofing section of this report.

B1022 Pitched Roof Construction

Like the flat roof construction, in areas of sloped roofs, primarily at the Public Safety Building, the roof construction consists of various depths of horizontal wide-flange steel beams at the perimeter and sloped beams at the interior, supported on steel columns, and covered with 1½" corrugated steel decking. The roof covering is described in section B30 Roofing section of this report.

B1023 Canopies

A steel-framed canopy, with corrugated roof deck and steel supporting column, is located along the south end of the parking deck. The canopy is attached to a concrete masonry perimeter wall along the south and a concrete masonry wall-

enclosed utility building along the west and provides cover for police vehicles (reference Photographs 13 and 14 in Appendix B).

B1030 STRUCTURAL FRAME

B1031 Steel Frame Structure

The building has structural steel construction at the second floor and roof levels, consisting of various wide-flange steel beams of 8" to 24" in depth, steel columns of tube steel (6" x 6" and 8" x 8") and wide-flange (12" depth) shapes and corrugated steel decking of 1½" to 3" in depth.

B1032 Concrete Frame Structure

The first floor level of the building has structural steel-reinforced concrete construction consisting of 24" x 24" concrete columns with various sizes of thickened (dropped slab) caps and concrete decks of 12" to 14" thickness.

CONDITION

B1010 FLOOR CONSTRUCTION

B1012 Upper Floors Construction

The elevated floors' construction is in good condition, with no indications of structural insufficiency observed or reported to us. However, there were signs of limited water infiltration through the first floor's concrete deck, observed on the underside of the deck in the parking garage (reference Photograph 18 in Appendix B). The infiltration has occurred from the surface parking deck areas, primarily around deck penetrations for drains. These conditions should be monitored during the period of study and if conditions worsen, repairs to the seals at the penetrations should be completed as part of operational maintenance. We do not anticipate expenditure during the cost study period relating to significant repair or replacement of the upper floor construction.

B1020 ROOF CONSTRUCTION

B1021 Flat Roof Construction

The flat roof construction at the building appeared to be in good condition. There were no visible signs of instability or deficiency noted. We do not anticipate any expenditure during the cost study period relating to major repair or replacement of the roof structure.

B1022 Pitched Roof Construction

The pitched roof construction appeared to be in good condition. There were no visible signs of failure noted. We do not anticipate any expenditure during the cost study period which relates to replacement of the roof structure.

B1023 Canopies

The steel-framed canopy is in good condition; however the steel framing contains surface corrosion and should be cleaned and painted in the near term for improved appearance as a matter of routine maintenance as an operational expense.

B1030 STRUCTURAL FRAME

B1031 Steel Frame Structure

The steel frame structure appeared to be in good condition. We do not anticipate major repair or replacement of structural elements during the cost study period.

B1032 Concrete Frame Structure

The reinforced concrete frame appeared to be in good condition. We do not anticipate the major repair or replacement of structural elements during the cost study period. However, the monitoring of minor water infiltration through walls and decks is recommended during the 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.

B2010 EXTERIOR WALLS

B2011 Exterior Wall Construction

The building is predominantly enclosed with painted cementitious plaster (stucco) and brick veneer on steel stud-framed walls (reference Photographs 1 to 6 in Appendix B). The drawings indicate the plaster system and brick veneer are applied over an air infiltration barrier, gypsum sheathing and 6" steel studs filled with R-19 batt insulation. The fire station's hose tower is constructed of steel-reinforced concrete walls, with a painted finish. Sun-screening canopies are provided over windows on the south and west facades, constructed of steel and aluminum, the canopies are bolted to the steel superstructure.

B2020 EXTERIOR WINDOWS

B2021 Windows

All windows at the building are dual/bulletproof glazed units, of fixed and awning types set in aluminum frames (reference Photographs 1 through 6 in Appendix B).

B2023 Storefronts

The building also contains aluminum-framed, double-glazed storefront systems, with fixed glazing panels and glazed entrance doors (reference Photograph 3 in Appendix B).

B2030 EXTERIOR DOORS

B2031 Glazed Doors & Entrances

The building has a public entrance to a central lobby for the Public Safety Building and Fire Station No.1 at the first floor level on the west side, from a plaza and parking area shared with the City Hall. The entrance is a pair of storefront type glazed doors. Secondary staff entrances for the Public Safety Building are at the basement level on the south side from Thirteenth Street and at the first floor level on the east side from the secured parking area. The fire station has secondary staff entrances at the first floor on the northwest side from Fifteenth Street and on the southeast side from the secured parking area (reference Photographs 1, 3 and 5 in Appendix B).

B2034 Overhead Doors

The fire station has four overhead doors each on the northwest and southeast façades, providing access to the apparatus bays (reference Photographs 5, 11 and 44 in Appendix B). The doors are sectional-type aluminum doors with glazing panels, approximately 14' wide by 12' in height each and with motorized door openers.

The parking garage entrance/exit ramps at the northwest corner of the building and within the secured parking area to the east side of the building have motorized coiling grilles to secure the openings.

B2039 Other Doors & Entrances

The building also contains single and double painted hollow metal doors in steel frames at service entrances and stair/corridor egress doors. Door hardware consists of lever handles and panic-type push bars.

CONDITION

B2010 EXTERIOR WALLS

B2011 Exterior Wall Construction

The exterior wall systems of the building appeared to be in good overall condition, with no significant signs of deterioration, water ingress or general failure noted. However, surface cracking in the stucco plaster and areas of staining/discoloration were noted on most facades (reference Photographs 28 and 29 in Appendix B). The exterior painted surfaces were reportedly last painted in 2011 and, based on the EUL of 4-years for exterior paint at this building, as well as current observed conditions, minor plaster repairs and re-painting will be necessary in the near-term in the study period to maintain the appearance and protect the exterior walls.

The canopies were in good condition, but initial corrosion was noted to be forming on the steel supports and the adjacent shelf-angles over the window openings (reference Photograph 31 in Appendix B). We recommend the metals be cleaned and repainted at the time of other exterior painting.

The brick veneer appeared to be in good condition. There were no signs of deterioration present. Brick veneer has a typical EUL of 75-years; therefore we do not anticipate the major repair or replacement of the brick veneer during the cost study period.

B2020 EXTERIOR WINDOWS

B2021 Windows

The windows appeared to be in good condition, with no deficiencies observed. The caulking at the perimeter of the window units was generally in good condition. However, we recommend that the caulking at the window (and door frame) perimeters be replaced mid-term in the study period, concurrent with exterior painting.

B2030 EXTERIOR DOORS

B2031 Glazed Doors & Entrances

The exterior doors appeared to be in good condition, although corrosion was noted, exacerbated as a result of the marine environment (reference Photograph 30 in Appendix B). Also, the entrance doorways are difficult to operate therefore we recommend the installation of a suitable automatic door opening device for disabled use and also the refinishing of the door surfaces at regular intervals in the study period.

B2034 Overhead Doors

The overhead doors and grilles were in good condition. However, the doors' motorized operators, with a typical EUL of 15 years, are anticipated to require replacement by the mid- to late-term of the study period.

B2039 Other Doors & Entrances

The metal doors appeared to be in good condition, with no observed issues. In general, the operation of the doors was satisfactory and without any difficulty. The local facilities team recommends the prep and painting of all exterior doors to extend their EUL, and maintain the appearance.

B30 ROOFING

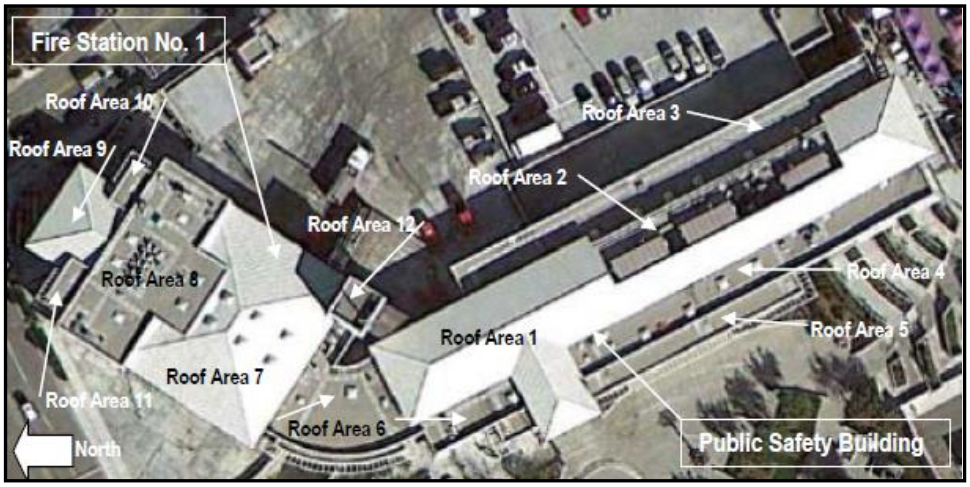
DESCRIPTION

B3010 ROOF COVERINGS

B3011 Roof Finishes

The facility contained several low-sloped roof areas, as well as pitched roofs; these roof areas are shown on the following aerial plan:

Overview of Roof Locations & Configurations



The building contains nine low-sloped roof areas covered with a white asphaltic built-up 3-ply membrane, with stone ballast (reference Photographs 20 through 22 and 25 through 27 in Appendix B). The roof covering is original to construction of the building, installed in 2006. Roof drainage is to surface mounted drains with internal leaders and by perimeter scuppers.

The building also has three pitched roof areas with standing seam metal roofing with a factory-applied painted finish (reference Photographs 23 and 24 in Appendix B). The metal roofing is also original to construction of the building, installed in 2006. Roof drainage is to perimeter gutters and downspouts, draining to the surrounding low-slope roofs or to grade. Table B30-1 provides a summary of the roof coverings:

Table B30-1 Summary of Roof Covering

Roof Component	Roofs 1, 7 & 9	Roofs 2 to 6, 8 & 10 to 12
Age	7 Years (2006)	7 Years (2006)
Roof Area (total / approx. square footage)	17,737 SF	17,807 SF
Application/ Membrane	Standing Seam Metal	White Asphaltic BUR
Manufacturer / Model	Tremco	Tremco
Surface	Prefinished Painted Finish	Gravel-Ballasted
Deck Type	Metal	Metal
Insulation	1" Dens-Deck, with R-30 Batts	½" Cold-Applied Fiberboard & 1 ½" Mechanically-Attached Polyisocyanurate, with R-30 Batts
Drainage	Perimeter Gutters & Downspouts	Internal Drains / Leaders
Overflow Scuppers	No	No (Overflow Drains)
Base Flashings	Aluminum	Hypalon Single Ply
Cap Flashings	None	Aluminum
Perimeter Enclosure	None	Parapet
Warranty (Manufacturer)	20 Years (Tremco) / Expiration June 15, 2026	15 Years (Tremco) / Expiration June 15, 2021
Warranty (Contractor)	Unknown (Best Roofing & Waterproofing)	Unknown (Best Roofing & Waterproofing)

B3020 ROOF OPENINGS

B3021 Glazed Roof Openings

There are a total of 37 skylights located in the metal roofing and built-up roofing areas (reference Photographs 21, 24 and 27 in Appendix B). The skylights are constructed with fixed dome-type plastic lens set in raised curb, aluminum framing.

CONDITION

B3010 ROOF COVERINGS

B3011 Roof Finishes

The low-sloped roofing areas appeared to be in good overall condition; we did not observe evidence of water ingress or other significant roofing deficiencies. These roofing areas will remain under original manufacturer's warranty for 13 more years. This type of roof covering has a typical EUL of 20 to 25-years; based on observed conditions and the age of the roofing material, we do not anticipate the need for significant repairs or replacements during the period of study. However, we noted the following conditions that require attention by the roofing service contractor as part of routine maintenance in the near term in order to maintain the integrity of the roofing system:

- Algae areas (ponding water), primarily at downspouts
- Debris (such as stockpiled holiday lights)

Additionally, the standing seam metal roofing areas appeared to be in good overall condition. These roofing areas will remain under original manufacturer's warranty for 8 more years. This type of roof covering has a typical EUL of 40-years and based on observed conditions and the age of the roofing material, we do not anticipate the need for significant repairs or replacements during the study period.

B3020 ROOF OPENINGS

B3021 Glazed Roof Openings

The skylights appear to be in fair to good overall condition. Conditions of note include a limited number of skylights with condensation within the glazing units, an indication of broken thermal seals; tarp-covered skylights, reportedly due to reduced interior lighting needed by the occupants; and metal flashing and curbs with corrosion. Confirmation that the tarp-covered skylights is due only to lighting levels and not water ingress is recommended. With and EUL of 30-years and based on observed conditions, we anticipate that the skylights will not require replacement during the study period. It is recommended to install interior blinds to the skylights following discussions with the City maintenance personnel.

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
B2011	Exterior Wall Construction	Clean and repair stucco cladding, replace sealants and repaint facades	55,400	SF	$3.25	$180,050	2013	3
B2011	Exterior Wall Construction	Clean and repair stucco cladding, replace sealants and repaint facades	55,400	SF	$3.25	$180,050	2017	3
B2011	Exterior Wall Construction	Clean and repair stucco cladding, replace sealants and repaint facades	55,400	SF	$3.25	$180,050	2021	3
B2031	Glazed Doors & Entrances	Refinish doors and frames	4	EACH	$250	$1,000	2014	5
B2031	Glazed Doors & Entrances	Install automatic door system	1	LS	$10,000	$10,000	2014	3
B2031	Glazed Doors & Entrances	Refinish doors and frames	4	EACH	$250	$1,000	2018	5
B2031	Glazed Doors & Entrances	Refinish doors and frames	4	EACH	$250	$1,000	2022	5
B2034	Overhead Doors	Replace motorized door operators	2	EACH	$8,000	$16,000	2020	3
B2039	Other Doors and Entrances	Refinish doors and frames	10	EACH	$200	$2,000	2014	5
B2039	Other Doors and Entrances	Refinish doors and frames	10	EACH	$200	$2,000	2018	5
B2039	Other Doors and Entrances	Refinish doors and frames	10	EACH	$200	$2,000	2022	5
B3021	Glazed Roof Openings	Install new blinds to skylights	37	EACH	$500	$18,500	2014	4
		Total Anticipated Expenditure for B Shell				$593,650		

SECTION 4 - C INTERIORS

C10 INTERIOR CONSTRUCTION

DESCRIPTION

C1010 PARTITIONS

C1011 Fixed Partitions

The building contains a combination reinforced concrete masonry walls and metal-stud-framed partitions with gypsum board sheathing, of varying thicknesses and fire ratings. The concrete masonry walls are primarily present at the lower (basement) level of the building.

C1020 INTERIOR DOORS

C1021 Interior Doors

The building generally contained single-leaf flush solid-core wood doors set in steel frames at office areas, storefront-type glazed doors in aluminum frames at departmental entrances and single-leaf hollow-core steel doors in steel frames. The doors all appeared to be one directional swing-type operation, with the doors at stairwells of fire-rated construction. The basement level vehicle sallyport has overhead coiling security grilles with motorized operators.

C1023 Interior Door Hardware

The doors contained brushed steel hardware typically consisting of lever door handles, most with overhead mechanical closers. Stairwell doors have panic-type push bar hardware.

C1030 FITTINGS

C1031 Fabricated Toilet Partitions

Restrooms have ceiling-hung enameled steel panel water closet and urinal stall partition with chrome hardware.

C1033 Storage Shelving & Lockers

The restrooms/shower-rooms in the building have wood-framed lockers with wood veneer-faced doors and face/side panels and steel hardware, as well as prefabricated metal lockers with chrome hardware; fixed wood benches are typically provided with the lockers (reference Photographs 40 and 48 in Appendix B).

CONDITION

C1010 PARTITIONS

C1011 Fixed Partitions

The interior fixed partitions appeared to be in good condition. There were no significant deficiencies found in relation to the wall structures; the fixed partitions are suitable for the current use; no major repairs or replacements to existing partitions are anticipated during the study period.

C1020 INTERIOR DOORS

C1021 Interior Doors

The interior doors appeared to be in good condition, with no significant deficiencies noted. We do not anticipate major expenditures in relation to the internal doors during the cost study period. The doors typically appeared to comply with disabled accessibility guidelines. The typical EUL for interior doors is 30 to 40 years; based on observed conditions and the age of the components, we do not anticipate the need for significant repairs or replacements during the period of study.

C1023 Interior Door Hardware

The door hardware typically appeared functional, with no issues of deterioration or failure noted throughout the building. The operation of the door handles, locks where installed and hinged swing were noted to be in good condition and to comply with disabled accessibility guidelines.

C1030 FITTINGS

C1031 Fabricated Toilet Partitions

The restroom stall partitioning is considered to be in good condition, with no significant deficiencies noted. The typical EUL for toilet partitions is 20 years; based on observed conditions and the age of the components, we do not anticipate the need for significant repairs or replacements during the period of study.

C1033 Storage Shelving & Lockers

The lockers were observed to be in good condition. The typical EUL for lockers of this type is 15 to 20 years; based on observed conditions and the age of the components, we do not anticipate the need for significant repairs or replacements during the period of study.

C2010 STAIR CONSTRUCTION

C2011 Regular Stairs

There are a total of seven stairways within the building, four connecting the basement level with the first floor, two connecting the first floor with the second floor in the fire station portion of the building, and the fire department hose tower stairway (reference Photographs 46 and 50 in Appendix B). The stairs are typically steel framed, including stringers and risers, with the landings and treads of steel construction with concrete fill. The handrails are typically center and wall-mounted steel pipe configurations on each side.

CONDITION

C2010 STAIR CONSTRUCTION

C2011 Regular Stairs

The stairways appeared to be in a good structural condition. However, the stair coverings are poor, with missing and failing treads. It is recommended to replace the stair covering, furthermore painting of stair components that may be required to maintain appearance of the facility is addressed in section C30 Interior Finishes.

The stair tread material and nosings are either missing or failing and therefore to maintain safety we recommend that they are replaced near-term in the study period.

C30 INTERIOR FINISHES

DESCRIPTION

C3010 WALL FINISHES

C3012 Wall Finishes to Interior Walls

Interior walls the building typically painted gypsum wallboard or concrete masonry, with locations on the basement level with unfinished concrete and concrete masonry (reference Photographs 32 through 37 in Appendix B). The restrooms and locker/shower rooms have 2" x 2" and 4" x 4" ceramic tiled walls (reference Photographs 39 through 41 in Appendix B) and portions of the lower level police department spaces having glazed concrete masonry walls.

C3020 FLOOR FINISHES

C3024 Flooring

The building contains stone and ceramic tile flooring, as well as vinyl composition tile flooring (reference Photographs 32, 33, 36 and 39 in Appendix B). The central entrance lobby has 24" x 24" stone tile flooring and the fire station kitchen area and the restrooms have 12" x 12" ceramic tile flooring. Corridors at the basement level and certain service spaces have 12" x 12" vinyl tile flooring. Areas within the first floor of the fire department and the basement level police department portions of the building have sealed and/or polished concrete floors.

C3025 Carpeting

The building contains sheet carpeting or carpet tiles primarily within office areas and their corridors (reference Photographs 34, 40, 45 and 48 in Appendix B).

C3030 CEILING FINISHES

C3031 Ceiling Finishes

There are painted gypsum board ceilings in restrooms, fire department living quarters and lobby/entrance areas of the building (reference Photographs 32, 37, 40 and 43 in Appendix B), with exposed structural framing in the fire department apparatus bays and portions of the basement level police department space.

C3032 Suspended Ceilings

The majority of the ceilings throughout the office areas and their corridors contain suspended acoustical tiled ceilings set within suspended metal grid systems (reference Photographs 36 and 45 in Appendix B). The ceiling tiles typically are 2' x 2' and the grid system is supported with wire from the underside of the structural frame. The ceiling system incorporates lighting fixtures and mechanical system components.

CONDITION

C3010 WALL FINISHES

C3012 Wall Finishes to Interior Walls

Interior wall finishes appeared to be in good to fair condition generally throughout the building, with only minor marks and damage observed. The EUL of these interior painted walls is 6 years at this building, and based on our observations, we recommend budgeting for re-painting of all the previously painted walls near-term in the study period, to maintain the appearance of the building and work areas.

The ceramic tiled walls and the ceramic-glazed concrete masonry walls appeared to be in good condition. The typical EUL for ceramic tiled/glazed walls is 30-years and, therefore, significant repair or replacement of the finishes is not anticipated.

C3020 FLOOR FINISHES

C3024 Flooring

The flooring appeared to be in good condition throughout the building. Vinyl flooring has a typical EUL of 15- to 18-years and, therefore, replacement during the study is not anticipated. The typical EUL for stone and ceramic tile floor coverings is 30-to 50-years and its replacement during the term of study is also not anticipated.

C3025 Carpeting

The carpeting appeared to be in fair condition, with only isolated areas of wear and staining noted. The typical EUL of carpeting is 7 to 10 years and, therefore we recommend budgeting for its replacement by the early- to mid-term of the study period to maintain appearance and building user requests.

C3030 CEILING FINISHES

C3031 Ceiling Finishes

The painted ceilings appeared to be in good condition. Painted ceiling surfaces usually have a typical EUL of 5- to 8-years; we recommend that the ceilings be re-painted at the time of other cyclical interior painting during the cost study period.

C3032 Suspended Ceilings

The suspended acoustical ceiling systems appeared to be in good condition. These ceilings have a typical EUL of 20-years, therefore, we do not anticipate a requirement for 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
C2011	Regular Stairs	Replace covering material and nosings at staircase treads	1	LS	$25,000	$25,000	2013	1
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	89,000	SF	$3.25	$289,250	2013	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	89,000	SF	$3.25	$289,250	2019	5
C3025	Carpeting	Replace carpeting	2,400	SY	$47	$112,800	2015	5
		Total Anticipated Expenditure for C Interiors				$716,300		

SECTION 5 - D SERVICES

D10 CONVEYING SYSTEMS

DESCRIPTION

D1010 ELEVATORS AND LIFTS

D1011 Passenger Elevators

The building contains one hydraulic-drive passenger elevator that serves the basement and first floor levels. The passenger elevator was manufactured by Mitsubishi and has a capacity of 2,500-pounds (reference Photograph 51 in Appendix B).

Machine Room Equipment

The passenger elevator machine room in the basement level contained the hydraulic fluid tank, pump and valve equipment serving the hydraulic ram to the elevator car, together with its individual control equipment.

Cab

The elevator cab consists of front entry pre-finished steel elevator doors and surrounds, with a combination of stainless steel and laminate sheet panel interior walls. A car-operating panel is provided within the cab.

Table D10-1 provides a summary of the elevator equipment:

Table D10-1 Summary of the Elevator

Equipment Type	Manufacturer	Model No.	Serial No.	No. of Landings	Speed (FPM)	Capacity (Pounds)	Year Install
Hydraulic Passenger Elevator	Mitsubishi	Unknown	Unknown	2	Unknown	2,500-pounds	2006

Unknown = Access limited or equipment had no name plates present.

CONDITION

D1010 ELEVATORS AND LIFTS

D1011 Passenger Elevators

The hydraulic elevator appeared to be in good condition, was operating satisfactorily and the equipment is approximately seven years old. Performance measurements were not taken to evaluate system performance to industry standards as published by the National Elevator Industry Inc. (N.E.I.I.). General system performance was observed such as door operation, acceleration and stopping. Where observed, performance appeared adequate.

The typical EUL for the major elevator equipment varies from 15 to 30 years, with the controller having an EUL typically of 20 years based on technological improvements. Therefore, requirements for major repairs or replacements are not anticipated during the study period.

D20 PLUMBING

DESCRIPTION

D2010 PLUMBING FIXTURES

D2011 Water Closets

The building contains wall-mounted vitreous china and stainless steel tank-less water closets with manual flush valves, within men's and women's restrooms, locker/shower rooms and police department holding cells (reference Photographs 38 and 41 in Appendix B). The drawings indicate the water closets typically are rated at 1.6 gallons per flush.

D2012 Urinals

The men's restrooms and locker/shower rooms in the building contains wall-hung vitreous china urinals with manual flush valves. The drawings indicate the urinals typically are rated at 1.0 gallons per flush.

D2013 Lavatories

The building's restrooms, locker/shower rooms and police department holding cells contain wall-mounted and vanity-recessed vitreous china and wall-hung stainless steel lavatories (reference Photographs 39 and 54 in Appendix B). The lavatories typically have of single-handle lever-type, non-metering faucets. The drawings indicate the mixing type faucet controls are provided with 0.5 gallons per minute aerators.

D2014 Sinks

Sinks provided in the building include kitchen-type stainless steel, single, double and three compartment models with single-lever faucets with 2.0 gallons per minute aerators, as wells as gooseneck type faucets and retractable handheld sprayers. Cast iron floor sinks are provided in janitor's closets.

D2017 Showers

The fire department and police department locker/shower rooms have individual, ceramic-tiled shower stalls. Most stalls have tempered glass doors in aluminum frames and wall-mounted controls and shower heads. Some locations have roll-in type shower stalls accessible by the disabled, with curtains instead of doors, grab bars, benches and shower heads that can be handheld (reference Photograph 40A in Appendix B). The police department holding cell area has wall-recessed stainless steel shower units with fixed shower heads and limited controls (reference Photograph 38A in Appendix B).

D2018 Drinking Fountains & Coolers

Wall-mounted stainless steel electric water coolers are provided in the building, noted on the drawings to be rated at 8.0 gallons-per-hour, with refrigerated water.

D2020 DOMESTIC WATER DISTRIBUTION

D2021 Cold Water Service

Cold water piping throughout the building consists of copper tubing. We believe the cold water service for the facility is supplied directly from the utility's street pressure, with taps made to the water line downstream of the meter and routed to plumbing fixtures and equipment via the copper pipe work. The water enters the facility at the basement level, at is west side.

D2022 Hot Water Service

Domestic hot water is generated by two Lochinvar domestic water boilers with storage tanks (reference Photograph 52 in Appendix B). The boilers are natural gas-fired and are located in utility rooms on the first and second floors, with in-line circulation pumps, rated at 5-gallons-per-minute and fractional horsepower motors.

Table D20-1 provides a summary of the water heaters:

Table D20-1 Summary of the Domestic Water Heating Equipment

Location	Equipment Type	Manufacturer	Model #	Serial #	Fuel / Rating	Capacity	≈ Year of Installation
1st Floor Utility Room (Public Safety Bldg)	Domestic Water Heater w/Pump	Lochinvar	300 PMF-7 EWN300PM	E05H00E H176174	Nat. Gas / 300 Mbh	305 GPH Recovery	2006
1st Floor Utility Room	Domestic Hot Water Tank	Lochinvar	RGA03183	Unknown	NA	300 Gal Assumed	2006
2nd Floor Utility Room (Fire Station)	Domestic Water Heater w/Pump	Lochinvar	200 PMF-7	Unknown	Nat. Gas / 200 Mbh	198 GPH	2006
2nd Floor Utility Room	Domestic Hot Water Tank	Lochinvar	RJA200 (Noted on Drawings)	Unknown	NA	200 Gal Assumed	2006

Unknown = Access limited or equipment had no name plates present.

D2030 SANITARY WASTE

D2031 Waste Piping

Waste piping observed at the building consisted of cast iron lines.

D2034 Sanitary Waste Equipment

There are three submersible duplex sump pump sets at the basement level for the removal of storm/floor drain waste water, rated at 50-, 200- and 600-gallons-per-minute respectively and with 1.0-, 3.0- and 7.5-horsepower motors respectively.

A submersible duplex sewage ejector pump set, rated at 50-gallons-per-minute with a 2.0-horsepower motor, is also provided at the basement level for basement level fixture sanitary waste removal.

CONDITION

D2010 PLUMBING FIXTURES

D2011 Water Closets

The water closets and flush valves appeared to be in good condition. The water closets tested appeared to flush properly and no damage was noted. There are specific water closets of accessible design, with appropriate accessories. Based on conditions and the EUL of the fixtures, we do not anticipate significant repairs or replacements during the study period.

D2012 Urinals

The urinals and flush valves appeared to be in good condition. The fixtures tested appeared to flush properly and no damaged was noted. Specific fixtures are located at disabled accessible height. Based on conditions and the EUL of the fixtures, we do not anticipate significant repairs or replacements during the study period.

D2013 Lavatories

The lavatories and faucets appeared to be in good condition, draining properly and without cracking or other damage. Most of the lavatories appeared to be ADA compliant. Based on conditions and the EUL of the fixtures, we do not anticipate significant repairs or replacements during the study period.

D2014 Sinks

The stainless steel sinks appeared to be in good condition. Based on conditions and the EUL of the fixtures, we do not anticipate significant repairs or replacements during the study period.

D2018 Drinking Fountains & Coolers

The wall mounted electric water coolers were in good condition, with no operational issues observed or reported. Based on conditions and the EUL of the fixtures, we do not anticipate significant repairs or replacements during the study period.

D2020 DOMESTIC WATER DISTRIBUTION

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 or deferred maintenance.

D2022 Hot Water Service

The domestic water equipment appeared to be in good condition. Water heating equipment such as this generally has a EUL of 15- to 20-years; therefore with an age of seven years, replacement of some of the equipment may be necessary late in the study period. We recommend budgeting for its replacement with energy efficient equipment.

D2031 Waste Piping

The waste piping appeared to be in fair to good overall condition, which typically has a EUL of 50 years . However, it was reported that the horizontal cast iron pipes have had a history of cracking, requiring replacement. Except in the basement parking garage, the design of the interior spaces makes it impractical to do a complete replacement of the piping. Therefore, we recommend budgeting for an annual allowance to address replacement of damaged cast iron sanitary waste piping during the study period.

D2034 Sanitary Waste Equipment

The sump pump sets are reportedly operating at designed and in good condition and no replacements during the study period are anticipated. A duplex sewage ejector pump set has a single inoperable pump that should be replaced in the near term of the study period.

D30 HVAC

DESCRIPTION

D3010 FUEL ENERGY SUPPLY SYSTEMS

D3012 Gas Supply System

Natural gas service is provided to the building. The pressure reducing station and gas meter are located at the south side of the building. Gas service is routed to the gas-fired domestic water heating equipment, the heating system boilers and the kitchen appliances.

D3020 HEAT GENERATING SYSTEMS

D3021 Boilers

Heating system hot water is supplied from two natural-gas-fired boilers (reference Photographs 55 & 56 in Appendix B). The boilers were manufactured by Raypac and are located in a small utility equipment building at the southeast corner of the Public Safety Building. The boilers' hot water is distributed by adjacent pad-mounted circulation pumps to the HVAC system's terminal units. The boilers were installed at the time of building construction in 2006. Refer to Table D30-1 for details of the boilers.

D3030 COOLING GENERATING SYSTEMS

D3031 Chillers

Chilled cooling system water is supplied from two screw-type chiller units (reference Photographs 57 and 58 in Appendix B). The chillers were manufactured by Carrier, each have a cooling capacity of 80 tons and are located in a small utility equipment building at the southeast corner of the Public Safety Building. The chillers were installed at the time of building construction in 2006. The cooling system's cooling towers, manufactured by Delta, are located on the roof (reference Photograph 59 in Appendix B). Refer to Table D30-1 for details of the chillers and cooling towers.

D3040 AIR DISTRIBUTION SYSTEMS

D3041 Air Distribution Systems

The building has four packaged air handling units (AHU) for conditioning and distributing tempered air throughout the building (reference Photograph 60 in Appendix B), each with cooling coils provided chilled water from the central system chillers. Three of the AHU are located on the roof of the Public Safety Building portion of the facility, with the fourth AHU in a first floor utility room. The units, manufactured by Carrier, were installed at the time of building construction in 2006. Refer to Table D30-1 for details of the air handling units.

The conditioned air from the AHU is distributed throughout the building via metal ductwork to variable air volume units (VAVs) located above the ceilings, to flexible metal duct connections to diffusers/grills recessed in the ceilings. The

majority of the VAVs are provided tempered air from the AHU, with some perimeter VAVs also having hot water heating coils.

D3042 Exhaust Ventilation Systems

The building contains various exhaust rooftop and interior fans serving the interior spaces (reference Photograph 63 in Appendix B). According to the drawings, the fans have air volumes ranging from of 100-cubic-feet-per-minute (cfm) for restrooms to 29,400-cfm for the parking garage. Supply air fans are also provided, serving electrical and mechanical rooms and various police department spaces. According to the drawings, the fans have air volumes ranging from of 100-cfm for an electrical room to 8,000-cfm for the basement level police department firing range. Refer to Table D30-1 for details of the exhaust and supply fans.

The fire department apparatus bays have a PlymoVent vehicle exhaust system, including retractable overhead ductwork and a rooftop exhaust fan (reference Photograph 64 in Appendix B). Refer to Table D30-1 for details of the vehicle exhaust equipment.

D3050 TERMINAL AND PACKAGED UNITS

D3051 Terminal Self-Contained Units

The fire department apparatus bays contain heating fan-coil units suspended overhead and provided hot water from the central boiler. According to the drawings, the units have air volumes ranging of 1,500- cfm and have heating input of 70,400-British-Thermal-Units-Per-Hour (BTUH). Refer to Table D30-1 for details of the unit heaters.

D3053 Split System

Supplemental heating and cooling is provided to the second floor fire department living quarters by Carrier heat pump/fan-coil units, each with cooling capacities of approximately 2-3 tons and heating capacities of 9,000 to 12,500 BTUH (reference Photographs 61 and 62 in Appendix B). The units were installed as part of original construction in 2006. Refer to Table D30-1 for details of the heat pump units.

Table D30-1 Summary of the HVAC Equipment

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Roof	Cooling Tower #1 w/Pumps	Delta	T-75	6456-1	225 GPM / 7.5 HP / 75 Tons	NA	2005
Roof	Cooling Tower #2 w/Pumps	Delta	T-75	Unknown	225 GPM / 7.5 HP / 75 Tons	NA	2005

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Roof	Air Handling Unit (#2)	Carrier	39MW36B00 58NR11XXS	2505F17465	16,000 CFM	Elec	2005
Roof	Air Handling Unit (#3)	Carrier	39MW36B00 58NR11XXS	2505F17466	16,000 CFM	Elec	2005
Roof	Air Handling Unit (#4)	Carrier	39MW30B00 58NS11XXS	2505F17395	15,000 CFM	Elec	2005
1st Floor Utility Room	Screw-Type Chiller	Carrier	30HXC096R 661AA	1405Q04988	80-85 Tons	Elec	2005
1st Floor Utility Room	Screw-Type Chiller	Carrier	30HXC096R 661AA	1405Q04989	80-85 Tons	Elec	2005
1st Floor Utility Room	(2) Condenser Water Pumps	Bell & Gossett	4BC / 4BC	C00721101J50 / C00721102J50	500 GPM / 10 HP	Elec	2006
1st Floor Utility Room	(2) Chilled Water Pumps	Bell & Gossett	4BC / 4BC	C00721001J50 / C00721002J50	400 GPM / 15 HP	Elec	2006
1st Floor Utility Room	Boiler	RayPak	HBH065Q2A	0504235051	650 MBTUH	Nat. Gas	2006
1st Floor Utility Room	Boiler	RayPak	HBH065Q2A	0504235050	650 MBTUH	Nat. Gas	2006
1st Floor Utility Room	(2) Hot Water Pumps	Bell & Gossett	15BC / 15BC	C00721201J50 / C00721202J50	50 GPM / 3 HP	Elec	2006
1st and 2nd Floors' Plenum	Variable Air Volume Units	Titus (Noted on Drawings)	Unknown	Unknown	250-1,470 CFM	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2-3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2-3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	38BNE 024301	Unknown	2 Tons	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32665	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNH 012300	0505Y30431	250-300 CFM / 1/48 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	Unknown	Unknown	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32660	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32668	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32670	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y30595	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32667	250-300 CFM / 1/50 HP	Elec	2006
Roof	Supply Air Fan	Cook	50 ASP	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan	Cook	70ACE	Unknown	Unknown	Elec	2006
Roof	Supply Air Fan	Cook	120AGE	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan	Cook	70ACE	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan (#9)	Cook	245VCRX 245VX3B	133S80862700	1.5 HP / 2,100 CFM	Elec	2004
Roof (Kitchen)	Evaporative Cooler (MUA-1)	Unknown	Unknown	Unknown	2,400 CFM	Elec	2005

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
1st Floor Apparatus Bays	(2) Hot Water Unit Heaters	Modyne	Unknown	Unknown	1,500 CFM	Elec. / Hot Water	2006
1st Floor Apparatus Bays & Roof	Vehicle Exhaust System	PlymoVent	Unknown	Unknown	Unknown	Elec	2006
First Floor Utility Room	Air Handling Unit (#1)	Carrier	39LD12GA	1905000872	5,000 CFM	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2 Tons	Elec	2006
Roof	Exhaust Fan	Cook	Unknown	Unknown	Unknown	Elec	2006
Roof	Split System Condenser	Carrier	38BNE 024301	1105V98199	2 Tons	Elec	2006
1st Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	Unknown	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan (#16)	Cook	100ACW 100W2B	138S812963	500 CFM	Elec	2004
Roof	Exhaust Fan (#24)	Cook	70ACE 70C2B	138S808627	200 CFM	Elec	2004
Utility Building Roof	(3) Exhaust & (2) Supply Air Fans	Cook / Unknown	Unknown	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan (#32)	Cook	70ACE 70C2B	Unknown	200 CFM	Elec	2004
Roof	Exhaust Fan	Cook	Unknown	Unknown	400 CFM	Elec	2004
Roof	Split System Condenser (CU-1)	Data Aire	ZR47K3 TFD235	05HA9932L	0.75 HP	Elec	2006
Roof	Exhaust Fan (#20)	Cook	80ACE 80C2B	138S808627	400 CFM	Elec	2004
1st Floor Utility Room	Exhaust Fan (#7)	Cook	180CPF 1800PFB	138S808627	5000 CFM	Elec	2004
Basement Utility Room	Supply Air Fan (#3)	Cook	245CPV 2450PV	138S8086270	8000 CFM	Elec	2006
Basement Utility Room	Exhaust Fan (#34)	York	Unknown	Unknown	15 HP	Elec	2006

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Basement Utility Room	Exhaust Fan (#4)	Unknown	Unknown	Unknown	Unknown	Elec	2006
Basement Utility Room	Exhaust Fan (#5)	Unknown	Unknown	Unknown	Unknown	Elec	2006

Assumed = Based on size of unit and area it serves / or possible year installed.
Unknown = Access limited or equipment had no name plates present.

D3060 HVAC INSTRUMENTATION AND CONTROLS

D3063 Other Controls & Instrumentation

The heating and cooling equipment are controlled by a Honeywell Building Automation System (BAS), a direct digital control system that controls the central HVAC components in the building. Low voltage actuators modulate valves and dampers to provide temperature control based on certain set points and/or local temperature sensors. Variable frequency drives are provided for all fans to modulate fan operation based on demand.

CONDITION

D3010 FUEL ENERGY SUPPLY SYSTEMS

D3012 Gas Supply System

No visually apparent problems with the gas distribution piping were observed at the building. No issues have been reported regarding performance; therefore we believe the supply will be serviceable, through the end of the study period.

D3020 HEAT GENERATING SYSTEMS

D3021 Boilers

The natural-gas fired boilers appeared to be in good condition, installed in 2006. The typical EUL of equipment such as this is 30-years and therefore the units are expected to last beyond the study period with regular maintenance. No issues concerning operation was observed or reported to us.

D3030 COOLING GENERATING SYSTEMS

D3031 Chillers

The chillers appeared to be in good condition, being only seven years old. The typical EUL of equipment such as this is 20 to 30-years and therefore the units are expected to last beyond the study period with regular maintenance.

D3040 AIR DISTRIBUTION SYSTEMS

D3041 Air Distribution Systems

The air handling units appeared to be in good overall condition and the ductwork, although not observable, is reportedly functioning as intended. A prior energy audit of the building (refer to the Document Review in Appendix D) indicates the need for basic mechanical system performance validation, to confirm the equipment installed at the time of construction was properly calibrated, to establish the current operating conditions of the major equipment and to reset the equipment where necessary for optimal performance. We recommend completion of this commissioning of the system for the near term of the study period, if not yet completed.

Only a small proportion of the ducting in the building was reviewed but that portion was noted to be in fair to good condition with no deficiencies. We recommend that the duct work is cleaned every 5 years starting at the start of the study period, as we assume it has not been cleaned since the building was built.

D3042 Exhaust Ventilation Systems

The exhaust and supply ventilation components appeared to be in good to fair overall condition. However, as with some of the other HVAC components at the rooftop, the fan housings have initial rusting and we recommend repainting as a routine maintenance operational expense. The typical EUL of ventilation equipment such as this is 15- to 20-years and therefore, a portion of the fan systems can be expected to require replacement during the study period. A replacement of the vehicle exhaust ventilation system fan with a soundproof unit has been requested by the Fire Chief and therefore has been included in the study period.

D3050 HEAT TRANSFER TERMINAL AND PACKAGED UNITS

D3051 Terminal Self-Contained Units

The terminal units appeared to be in good condition. The typical EUL of equipment such as this is twenty-years and therefore major repairs or replacement of the units is not anticipated during the study period.

D3053 Split System

The interior fan-coil units and rooftop condensers are considered to be in good overall condition, being seven years of age. The typical EUL of equipment such as this is twenty-years and therefore major repairs or replacement of the units are not anticipated during the study period.

D3060 HVAC INSTRUMENTATION AND CONTROLS

D3069 Other Controls & Instrumentation

The HVAC control system appears to be operating as designed and in good condition. However, the system technology typically goes through regular improvements and with an expected useful life of 15- to 20-years, the need for upgrading of the system components late in the term of study is anticipated. As indicated, commissioning of the HVAC system is recommended, which would include performance review of the control system. In addition, the prior energy audit of the

building (refer to the Document Review in Appendix D) recommends upgrading the system graphics, use of touch-screen technology and further staff training for improved system functionality.

D40 FIRE PROTECTION

DESCRIPTION

D4010 SPRINKLERS

D4011 Sprinkler Water Supply

The building is protected throughout with an automatic wet-pipe fire suppression system utilizing standard pendent commercial sprinkler heads fixed to fire-line pipes which are supported via the upper structure. The system is monitored by water-flow- and tamper-switches connected to the fire alarm system and is supplied water at municipal main pressure, without the use of pumps.

D4020 STANDPIPES

D4021 Standpipe Water Supply

Fire protection standpipes with hose connections are located throughout the building, typically within stairwells (reference Photograph 65 in Appendix B). The system is monitored by water flow and tamper switches connected to the fire alarm system.

D4024 Fire Hose Equipment

As part of the fire department training program, the building contains a pumping system for fire hose training (reference Photograph 66 in Appendix B). Water service is provided by basement pumps up to Siamese hose connections and a small training building at the east side of the surface parking deck. Table D40-1 provides a summary of the fire protection training equipment.

Table D40-1 Summary of the Fire Protection Training Equipment

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Basement Enclosure	(2) Fire Hose Training Water Pumps	Lincoln (Motors)	SF2P60T JP61Y	Unknown	60 HP	Elec	2006

D4030 FIRE PROTECTION SPECIALTIES

D4031 Fire Extinguishers

Multipurpose portable wall mounted handheld fire extinguishers were provided throughout the building.

CONDITION

D4030 FIRE PROTECTION SPECIALTIES

D4011 Sprinkler Water Supply

The sprinkler system was observed to be in good condition with all inspections up to date. No visible corrosion or leaks were observed. We do not anticipate any work within the cost study period, except for regular maintenance and testing of the system.

D4020 STANDPIPES

D4021 Standpipe Water Supply

The standpipe system was observed to be in good condition and, in conjunction with the sprinkler system, all inspections are up to date. No visible corrosion or leaks were observed. We do not anticipate any work within the cost study period, except for regular maintenance and testing of the system.

D4024 Fire Hose Equipment

The fire hose pumping equipment appeared to be in good condition. With a typical EUL for pumps of this size of 25 years, major repairs or replacements are not anticipated during the study period.

D4030 FIRE PROTECTION SPECIALTIES

D4031 Fire Extinguishers

Fire extinguishers appeared to be in good condition. We understand they are maintained on a yearly basis by the contractor DCS Testing & Equipment and were last tested in February of 2013. We do not anticipate a requirement to replace any fire extinguishers during the study period.

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 main incoming electrical service is routed from a utility transformer located in a walled enclosure at the southeast corner of the site, underground to the main electrical room on the basement level of the building. Service to the two-section switchgear, manufactured by Eaton/Cutler Hammer, is rated at 277/480-volts, 2,000 amps, 3-phase, 4-wire and contains a single meter and fusible switches (reference Photograph 67 in Appendix B). A power-step down transformers, rated at 500-KiloVolt-Amps (KVA) is provided for building reduced voltage service. Branch panels fed from the switchgear are typically Eaton/Cutler Hammer products throughout the building and are rated variously at 277/480- and 120/208-volts, at 100 to 1,200 amps each.

In addition to the fusible safety switches used as the service disconnecting means, fusible and non fused type safety switches are also installed near equipment such as the chillers and air handling units and serve as the required local disconnecting means for the equipment.

D5020 LIGHTING & BRANCH WIRING

D5021 Branch Wiring Devices

The branch wiring devices at the building include switches, power receptacles and other devices that would be generally associated with this type of building. Branch wiring is indicated on the drawings to typically be distributed in ½" electric metallic tubing (EMT) and flexible metal conduit.

D5022 Lighting Equipment

The interior lighting within the building is primarily provided by 4-foot recessed or surface-mounted fluorescent fixtures with two 32-watt T-8 lamps and electronic ballasts, Also used are ceiling recessed 2' x 2' parabolic fixtures with 40-watt T-5 fluorescent lamps with electronic ballasts (reference Photographs 17, 32, 37, 40 and 45 in Appendix B). In the parking garage, lighting is provided by surface mounted 4-foot fluorescent fixtures with 32-watt T-8 lamps and electronic ballasts. The majority of the lighting is controlled via occupancy sensors, with local switching in some locations.

D5030 COMMUNICATIONS & SECURITY

D5033 Telephone Systems

The telephone system and servers were contained in a lower level utility room.

D5037 Fire Alarm Systems

The building is protected by a digital automatic fire detection alarm system. The main Fire Alarm Control Panel (FACP) is located within the lower level manned police department area, and was manufactured by Honeywell. Addressable devices are located throughout each floor level, such as smoke and heat detectors, manual pull stations, water flow monitors and audible and visible alarm devices.

D5038 Security and Detection Systems

The building contains a security system that consists of a programmable security alarm panel, door contacts and motion sensors. The multi-zone system has panels located at the entrances with proximity sensors and motion sensors located throughout the building.

D5090 OTHER ELECTRICAL SYSTEMS

Emergency egress lighting and illuminated exit signs are provided at exit routes from the building, connected to the emergency power system.

CONDITION

D5010 ELECTRICAL SERVICE AND DISTRIBUTION

D5012 Low Tension Service & Dist.

The electrical equipment was noted to be in good condition. Electrical distribution systems generally have a typical EUL of more than thirty-years. We understand that the electrical conduits and feeder wires for HVAC, power and lighting are subject to failure. Some repair work has been conducted, but more work is required. We recommend that the required work be undertaken near-term to remove any power issues that the building faces.

D5020 LIGHTING & BRANCH WIRING

D5021 Branch Wiring Devices

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

D5022 Lighting Equipment

The interior lighting, primarily utilizing T8 fluorescent fixtures and occupancy sensor controls, is considered to be in good condition and a fair efficient system, although calibration of some sensor controls may be needed for occupant satisfaction. We do not anticipate significant repairs or replacements during the study period.

D5030 COMMUNICATIONS & SECURITY

D5033 Telephone Systems

The existing telephone and data equipment was observed to be in good condition, with no reported insufficiencies. We do not anticipate any replacements during the cost study period.

D5037 Fire Alarm Systems

The fire alarm system appeared to be in good condition. We are unaware of any issues with the system and it appeared that it receives regular testing. We do not anticipate any replacements during the cost study period, as long as regular upgrades are undertaken as required.

D5038 Security and Detection Systems

The security system appeared to be in good condition. We are unaware of any issues with the system. We do not anticipate any replacement during the cost study period.

D5090 OTHER ELECTRICAL SYSTEMS

D5092 Emergency Light & Power Systems

Emergency egress lighting and exit signs appeared to be in fair condition. However, it is reported that the batteries and chargers are failing. It is recommended to upgrade to an LED fixtures early in 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
D2022	Hot Water Services	Replace domestic hot water boiler, tank and pump	1	LS	$8,830	$8,830	2020	4
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2013	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2014	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2015	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2016	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2017	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2018	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2019	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2020	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2021	3
D2031	Waste Piping	Allowance: replace cast iron piping	1	LS	$2,500	$2,500	2022	3
D2034	Sanitary Waste Equipment	Replace inoperable sewage ejector pump	1	LS	$3,000	$3,000	2014	2
D3041	Air Distribution Systems	Recommission HVAC system	60,129	SF	$1.60	$96,206	2015	3
D3041	Air Distribution Systems	Clean ductwork	60,129	SF	$0.25	$15,033	2013	3
D3041	Air Distribution Systems	Clean ductwork	60,129	SF	$0.25	$15,033	2018	3
D3042	Exhaust Ventilation Systems	Replace vehicle exhaust ventilation system fan with a soundproof unit	1	LS	$6,500	$6,500	2014	3
D3042	Exhaust Ventilation Systems	Replace rooftop exhaust fans	4,800	CFM	$1.25	$6,000	2020	3
D3069	Other Controls & Instrumentation	Upgrade DDC control system	60,129	SF	$3.25	$195,419	2021	3
D5012	LowTension Service & Dist.	Repair failures to the HVAC electrical supplies	1	LS	$25,000	$25,000*	2014	2
D5012	LowTension Service & Dist.	Repair failures to the general building electrical supplies	1	LS	$75,000	$75,000*	2014	2

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
D5092	Emergency Light & Power Sytems	Replace egress lighting with LEDs	1	LS	$15,000	$15,000	2013	1
		Total Anticipated Expenditure for D Services				$486,020		

* Expenditure advised by the City Maintenance Personnel

SECTION 6 - E EQUIPMENT & FURNISHINGS

E20 FURNISHINGS

DESCRIPTION

E2010 FIXED FURNISHINGS

E2012 Fixed Casework

The building contained wood-constructed base- and wall-mounted fixed casework within reception areas, break rooms, storage rooms, work areas and the fire department living quarters' kitchen (reference Photographs 33, 35 and 47 in Appendix B). The wood cabinets generally consisted of hardwood frames with Oriented Strand Board (OSB) panels and doors, covered with plastic laminate. The counters observed were also plastic laminate. Some of the locker rooms have wood-constructed floor-mounted lockers, constructed with hardwood frames and OSB panels and doors, covered with wood veneer (reference Photograph 48 in Appendix B)

CONDITION

E2010 FIXED FURNISHINGS

E2012 Fixed Casework

The base and wall cabinets and lockers appeared to be in good condition. Fixed cabinets such as these have a typical EUL of 20 years; therefore replacement will not be necessary during the study period.

PROJECTED EXPENDITURES

There are no projected expenditures for E Equipment & Furnishings during the study period.

SECTION 7 - G BUILDING SITEWORK

G20 SITE IMPROVEMENTS

In addition to the building 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 over all. 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

G2022 Paving & Surfacing

The site contains a surface parking deck to the east of the building, along North Valley Drive, accessed at two locations (reference Photographs 8 through 13 in Appendix B). The fire department has a gated vehicle entrance into the parking deck near the northeast corner of the building and a gated staff entrance/exit is located near the site's southeast corner. The entrances have steel-reinforced concrete aprons connected to the structural concrete parking deck over the basement level. The parking deck contains a driving ramp down to the basement level, serving the police department's secured sallyport, and has a total of 50 designated parking spaces. A total of 84 additional parking spaces in a controlled access area are also provided for the facility in the basement level parking garage. The fire department vehicle exit from the apparatus bays is from the north end of the building, with a steel-reinforced concrete driveway provided to Fifteenth Street. An exit ramp from the parking garage level and the secured sallyport up to 15th Street is located at the northwest corner of the site.

As described in section B1010 Floor Construction, the parking deck construction consists of 12" to 14" concrete decks, with up to 4"-thick sloped concrete topping slabs installed to promote stormwater drainage. This concrete deck is sandwich-type construction that includes the structural first-floor-level deck covered by a waterproofing membrane, with the topping layer of concrete poured over the membrane. The deck has expansion joint material installed at regular intervals.

G2030 PEDESTRIAN PAVING

G2031 Paving & Surfacing

The site contains concrete sidewalks along the public roadways along it north, east and south boundaries, with the pavement at the north end of the site having memorial sculpture and precast concrete benches and the south end having concrete steps and ramp for access to the building's basement level (reference Photographs 4 and 9 in Appendix B). The steps and ramp have painted metal railings placed on bordering concrete walls. At the west side of the building, the entrance to the building is from a concrete-paved municipal plaza shared with the adjacent City Hall (reference Photograph 3 in Appendix B).

G2040 SITE DEVELOPMENT

G2041 Fences & Gates

The parking deck entrances are secured by rolling steel gates with motorized chain-drive operators that are controlled by proximity readers and card keys (reference Photograph 7 in Appendix B). The gates are located at the southeast and northeast corners of the parking deck, along North Valley Drive.

G2042 Retaining Walls

Retaining walls, steel-reinforced concrete of varying height and approximately 10" wide, are provided at each side of the ramped garage entrance/exit driveways at the northwest corner and along the east side of the building (reference Photograph 4 in Appendix B). Planters with steel-reinforced concrete walls are integrated into retaining walls along steps and walkways leading to the public plaza at the west side of the building.

G2043 Terrace & Perimeter Walls

The surface parking deck has perimeter walls of split-faced concrete masonry along its east and south sides at a height of approximately 8' to 10 (reference Photographs 7 and 8 in Appendix B). The utility company's electrical transformer, at the southeast corner of the site, is also enclosed with similar concrete masonry walls, with steel doors in steel frames for equipment access. The walls, placed on the basement level foundation walls of the parking garage, are steel reinforced and contain sections of painted steel fencing..

G2049 Miscellaneous Structures

The surface parking deck at the east side of the building contains several miscellaneous utility/service structures (reference Photographs 8 and 9 in Appendix B):

- The largest structure is a single story mechanical equipment structure with concrete masonry load-bearing walls and steel-framed roof, located at the south end of the parking area along Thirteenth Street (reference Photograph 14 in Appendix B). The building has built-up roofing with graveled surface and painted flush steel doors in steel frames. The building contains the Public Safety Building's central plant HVAC equipment, including chillers and chilled water pumps, boilers and hot water pumps, as well as police department kennel. The structure is approximately 54' x 136', containing 7,344 square feet.
- A stairwell, providing egress from the basement level parking garage, is located near the site's southeast corner along North Valley Drive. The stair enclosure has concrete masonry load-bearing walls and a steel-framed roof, with built-up roofing and a painted flush steel door in steel frame, exiting out to North Valley Drive. Adjacent to the stairwell is storage area enclosed by the site's perimeter concrete masonry walls. The structure is approximately 9'-6" x 24', containing 228 square feet.
- A structure enclosing the waste dumpster, located south of the fire department's gated entrance from North Valley Drive, has concrete masonry load-bearing walls and a steel-framed roof, with built-up roofing and painted flush steel doors in steel frames. The structure is approximately 10'-8" x 22', containing 235 square feet.

- A fire hose testing structure is located north of the fire department's gated entrance from North Valley Drive and has painted, steel-reinforced concrete walls, built up roofing and galvanized steel louvers and a galvanized steel coiling overhead door. The structure serves as a fire hose spraying receptor and contains a galvanized steel water reflector and steel-grated floor. The water flow is collected in a basement level pit and water is evacuated by pumps. The structure is 11' x 11'-4", containing 125 square feet on each of the main and basement levels.

G2050 LANDSCAPING

G2056 Planters

Landscaping consisted of shrubs and ground cover, and small specimen trees located in reinforced concrete planters at several locations at the perimeter of the site, including the plaza between the Property and the adjacent City Hall (reference Photographs 1 to 3 in Appendix B).

G2057 Irrigation Systems

The landscaped areas are irrigated via a below grade automatic irrigation system. The irrigation system is supplied by below grade PVC piping and an automatic controller. Above ground sprinkler heads are scattered throughout the site.

CONDITION

G2020 PARKING LOTS

G2021 Paving & Surfacing

The concrete paved parking deck, as well as the entrance aprons and drives appeared to be in good to fair condition. There were areas of the pavement that contained minor surface cracking; the amount of cracking was considered insufficient for inclusion as a capital expenditure, therefore, we recommend the pavement be repaired as an operational expense as necessary. There is an ongoing issue of water infiltration. As the deck is still under warranty it's repair will not be covered here. The re-application of surface markings is recommended in the near term and every three- to five-years thereafter to maintain the appearance of the facility.

G2030 PEDESTRIAN PAVING

G2031 Paving & Surfacing

The pedestrian paving, including walkways, steps and ramps, is in good condition; we do not anticipate the need for major repairs or replacements during the study period.

G2040 SITE DEVELOPMENT

G2041 Fences & Gates

The parking deck entrance/exit gates appeared to be in good condition and were observed to operate properly.

G2042 Retaining Walls

The retaining walls at the facility appeared to be in good condition, with no issues observed and no reported instances of deficiency. We do not anticipate major repairs or replacement during the study period.

G2043 Terrace & Perimeter Walls

The site's perimeter walls appeared to be in good condition, with no issues observed and no reported instances of deficiency. We do not anticipate major repairs or replacement during the study period.

G2049 Miscellaneous Structures

The various miscellaneous structures appeared to be in fair to good condition, with no issues of deterioration or deficiency noted. We do not anticipate major repairs or replacement during the study period.

G2050 LANDSCAPING

G2056 Planters

The planters and their 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 Property appears to be in good condition. No issues were observed and no reported instances of disrepair or poor functioning indicated. We do not anticipate replacement during the study period.

G40 SITE ELECTRICAL UTILITIES

DESCRIPTION

G4020 SITE LIGHTING

G4021 Fixtures & Transformers

Exterior lighting at the Property consists of steel-pole-mounted lights with high-intensity discharge (HID) lamps. There are one and two fixtures per pole, with the poles being approximately 25' in height, placed on concrete piers.

G4090 OTHER SITE ELECTRICAL UTILITIES

G4092 Site Emergency Power Generation

The building is served by an Caterpillar emergency generator located within the secure parking area at the southeast corner of the Property (reference Photograph 69 in Appendix B). The generator is diesel fueled and has a rating of 800-KW or 1,000-KVA. A 6,000-gallon storage tank, with concrete containment basin, is located adjacent to the generator. An automatic power transfer switch associated with the generator was manufactured by Asco and is located in the main electrical room. Table G40-1 provides a summary of the emergency power generation equipment.

Table G40-1 Summary of the Emergency Power Generation Equipment

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Exterior Parking Lot	Generator	Caterpillar	3412	Unknown	1,000 KVA / 800 KW	Diesel	2004
Exterior Parking Lot	Generator Fuel Tank	Unknown	Unknown	Unknown	6,000 Gal	NA	2004
Basement Electrical Room	Transfer Switch	Asco	7000-Series	Unknown	1,600-Amps	NA	2004

CONDITION

G4020 SITE LIGHTING

G4021 Fixtures & Transformers

The pole mounted lights appeared to be in fair to good condition and any necessary repair or replacement during the term of study should be addressed on an as-needed basis as part of routine maintenance and funded as an operational expense.

G4092 Site Emergency Power Generation

The emergency generator appeared to be in good mechanical condition. Equipment such as this has a typical EUL of twenty- to twenty-five-years. Based on observed conditions of the 7 to 9 year old equipment, we anticipate that the generator will last beyond the study period, without the need for replacement. We recommend the continuation of regular maintenance and testing as required. Also, painting and preventative maintenance of the equipment and the enclosure is required early in 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. Item	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
G2021	Paving & Surfacing	Restriping at the parking areas	145	EACH	$15.00	$2,175	2015	3
G2021	Paving & Surfacing	Restriping at the parking areas	145	EACH	$15.00	$2,175	2020	3
G2041	Fences & Gates	Replace motorized gate operators	3	EACH	$7,000	$21,000	2014	3
G4092	Site Emergency Power Generation	Painting and maintenance to emergency power generators	1	LS	$1,000	$1,000	2014	3
		Total Anticipated Expenditure for G Building Sitework				$26,350		

Appendix A

Ten-Year
Expenditure Forecast
2013 - 2022

FAITHFUL+GOULD
CONSTRUCTIVE EXPERTISE

10 YEAR EXPENDITURE FORECAST

Public Safety Building and Fire Station No. 1
400 - 420 15th Street
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	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Deferred	Scheduled	
A. SUBSTRUCTURE																					
							A. SUBSTRUCTURE SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
B. SHELL																					
B2011	Clean & repair stucco, replace sealants & repaint facades	4	0	55,400.00	SF	$3.25	Deferred Maintenance	5	$180,050	$0	$0	$0	$0	$0	$0	$0	$0	$0	$180,050	$0	$180,050
B2011	Clean & repair stucco, replace sealants & repaint facades	4	4	55,400.00	SF	$3.25	Routine Maintenance	5	$0	$0	$0	$0	$180,050	$0	$0	$0	$180,050	$0	$0	$360,100	$360,100
B2031	Refinish doors and frames	4	1	4.00	EACH	$250.00	Routine Maintenance	5	$0	$1,000	$0	$0	$0	$1,000	$0	$0	$0	$1,000	$0	$3,000	$3,000
B2031	Replace automatic door system	10	1	1.00	LS	$10,000.00	Capital Renewal	3	$0	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,000	$10,000
B2034	Replace motorized door operators	15	8	2.00	EACH	$8,000.00	Capital Renewal	3	$0	$0	$0	$0	$0	$0	$0	$16,000	$0	$0	$0	$16,000	$16,000
B2039	Refinish doors and frames	4	1	10.00	EACH	$200.00	Routine Maintenance	5	$0	$2,000	$0	$0	$0	$2,000	$0	$0	$0	$2,000	$0	$6,000	$6,000
B3021	Install new blinds to skylights	10	1	37.00	EACH	$500.00	Capital Renewal	4	$0	$18,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,500	$18,500
							B. SHELL SUB-TOTALS		$180,050	$31,500	$0	$0	$180,050	$3,000	$0	$16,000	$180,050	$3,000	$180,050	$413,600	$593,650
C. INTERIORS																					
C2011	Replace covering material and nosing's at staircase treads	10	0	1.00	LS	$25,000.00	Deferred Maintenance	1	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000	$0	$25,000
C3012	Repaint interior wall and ceiling surfaces	6	0	89,000.00	SF	$3.25	Deferred Maintenance	5	$289,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$289,250	$0	$289,250
C3012	Repaint interior wall and ceiling surfaces	6	6	89,000.00	SF	$3.25	Routine Maintenance	5	$0	$0	$0	$0	$0	$0	$289,250	$0	$0	$0	$0	$289,250	$289,250
C3025	Replace carpeting	10	4	2,400.00	SY	$47.00	Capital Renewal	5	$0	$0	$112,800	$0	$0	$0	$0	$0	$0	$0	$0	$112,800	$112,800
							C. INTERIORS SUB-TOTALS		$314,250	$0	$112,800	$0	$0	$0	$289,250	$0	$0	$0	$314,250	$402,050	$716,300
D. SERVICES																					
D2022	Replace domestic hot water boiler, tank and pump	15	8	1	LS	$8,830	Energy & Sustainability	4	$0	$0	$0	$0	$0	$0	$0	$8,830	$0	$0	$0	$8,830	$8,830
D2031	Sanitary waste piping replacement allowance	1	0	1	LS	$2,500	Deferred Maintenance	3	$2,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,500	$0	$2,500
D2031	Sanitary waste piping replacement allowance	1	1	1	LS	$2,500	Routine Maintenance	3	$0	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$0	$22,500	$22,500
D2034	Replace inoperable sewage ejector pump	20	1	1.00	LS	$3,000.00	Deferred Maintenance	2	$3,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,000	$0	$3,000
D3041	Recommission HVAC system	30	2	60,129.00	SF	$1.60	Energy & Sustainability	4	$0	$0	$96,206	$0	$0	$0	$0	$0	$0	$0	$0	$96,206	$96,206
D3041	Clean ductwork	5	0	60,129.00	SF	$0.25	Deferred Maintenance	3	$15,032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$15,032	$0	$15,032
D3041	Clean ductwork	5	5	60,129.00	SF	$0.25	Routine Maintenance	3	$0	$0	$0	$0	$0	$15,032	$0	$0	$0	$0	$0	$15,032	$15,032
D3042	Replace vehicle exhaust ventilation system fan with a soundproof unit	20	1	1.00	LS	$6,500.00	Capital Renewal	3	$0	$6,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,500	$6,500
D3042	Replace rooftop exhaust fans	20	7	4,800.00	CFM	$1.25	Capital Renewal	3	$0	$0	$0	$0	$0	$0	$0	$6,000	$0	$0	$0	$6,000	$6,000
D3069	Upgrade DDC control system	15	8	60,129.00	SF	$3.25	Energy & Sustainability	3	$0	$0	$0	$0	$0	$0	$0	$0	$195,419	$0	$0	$195,419	$195,419
D5012	Repair failures to the HVAC electrical supplies	N/A	1	1.00	LS	$25,000.00	Capital Renewal	2	$0	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000	$25,000
D5012	Repair failures to the general building electrical supplies	N/A	1	1.00	LS	$75,000.00	Capital Renewal	2	$0	$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,000	$75,000
D5092	Replace egress lighting with LEDs	15	0	1.00	LS	$15,000.00	Deferred Maintenance	1	$15,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$15,000	$0	$15,000
							D. SERVICES SUB-TOTALS		$35,532	$109,000	$98,706	$2,500	$2,500	$17,532	$2,500	$17,330	$197,919	$2,500	$35,532	$450,488	$486,020
E. EQUIPMENT & FURNISHING																					
							E. EQUIPMENT & FURNISHING SUB-TOTALS		$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
G. BUILDING SITEWORK																					
G2021	Restriping at the parking areas	5	2	145	EACH	$15.00	Routine Maintenance	3	$0	$0	$2,175	$0	$0	$0	$0	$2,175	$0	$0	$0	$4,350	$4,350
G2041	Replace motorized gate operators	15	10	3	EACH	$7,000.00	Capital Renewal	3	$0	$21,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$21,000	$21,000
G4092	Painting and maintenance to emergency power generators	10	1	1	LS	$1,000.00	Capital Renewal	3	$0	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,000	$1,000
							G. BUILDING SITEWORK SUB-TOTALS		$0	$22,000	$2,175	$0	$0	$0	$0	$2,175	$0	$0	$0	$26,350	$26,350
Z. GENERAL																					
							Z. GENERAL SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
							Expenditure Totals per Year		$529,832	$162,500	$213,681	$2,500	$182,550	$20,532	$291,750	$35,505	$377,969	$5,500	$529,832	$1,292,488	$1,822,320

Total Cost (Inflated @ 4% per Yr.)	$529,832	$169,000	$231,118	$2,812	$213,558	$24,981	$369,157	$46,722	$517,277	$7,828	$529,832	$1,582,452	$2,112,285

Appendix B
Photographs

FAITHFUL+GOULD
CONSTRUCTIVE EXPERTISE

Photograph 1

View of the south façade, facing 13th Street

Photograph 2

View of the west façade, facing the public plaza

Photograph 3

View of the main entrance at the west side of the building, from the public plaza

Photograph 4

View of the basement parking garage exit at the northwest corner of the building

Photograph 5

View of the north façade of the building, facing 15th Street

Photograph 6

View of the north and east facades, facing the intersection of 15th Street and North Valley Drive

Photograph 7

View of the secured parking entrance from North Valley Drive

Photograph 8

Overview of the surface parking deck, looking southeast

Photograph 9

Overview of the surface parking deck, looking southwest

Photograph 10

View of the concrete surface parking deck

Photograph 11

View of the south façade of Fire Station No.1 and the apparatus bays' entrances

Photograph 12

View of the east façade of the Public Safety Building

Photograph 13

View of the east façade of the Public Safety Building and the mechanical equipment structure

Photograph 14

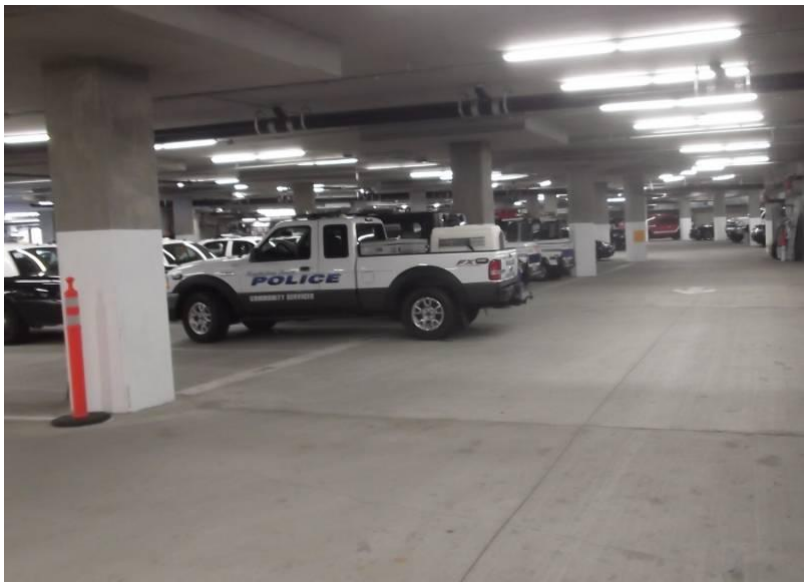
View of the freestanding mechanical equipment structure at the south end of the surface parking deck

Photograph 15

View of storm water inlet, with concrete cracking

Photograph 16

Detail of cracking in the surface parking deck



Photograph 17

View of the basement level parking garage

Photograph 18

View of the underside of the surface parking deck, with water infiltration staining

Photograph. 19

View of the basement foundation wall with water infiltration staining

Photograph 20

View of the upper roof over the Public Safety Building (Roof Area 2)

Photograph 21

View of the roof of the fire station (Roof Area 8)

Photograph 22

View of typical roof drain and overflow drain

Photograph 23

View of the metal roofing over the fire station (Roof Area 7)

Photograph 24

Detail view of corrosion in the skylight curbing at the fire station

Photograph 25

View of one of the lower roofs of the Public Safety Building (Roof Area 6)

Photograph 26

Detail view of staining on the roofing, an indication of regular ponding water

Photograph 27

View of one of the covered skylights

Photograph 28

Detail view of staining/marking on the stucco cladding

Photograph 29

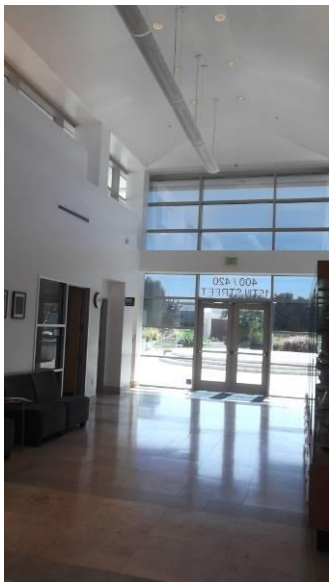
Detail view of staining/marking on the stucco cladding

Photograph 30

Detail view of corrosion on a metal door and frame

Photograph 31

Detail view of corrosion on sun screen framing

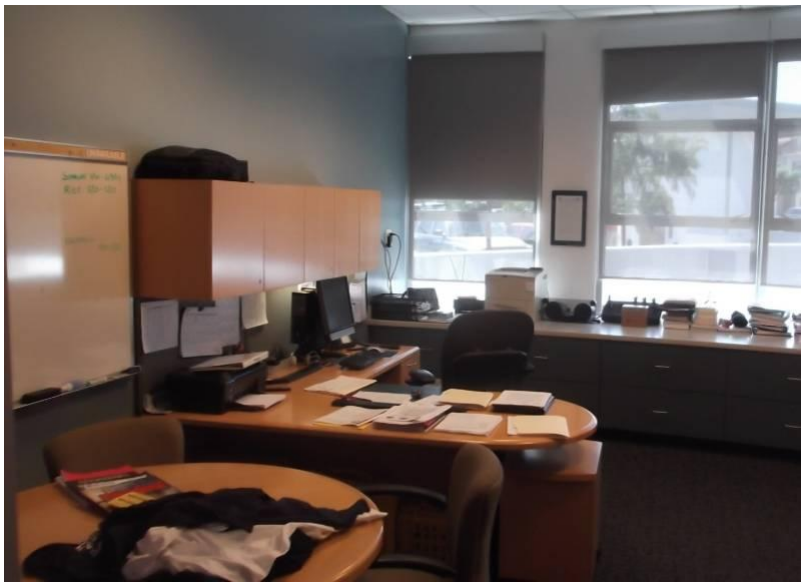


Photographs 32A and 32B

View of the main entrance lobby

Photograph 33

View of the fire department reception area



Photograph 34

View of a typical private office

Photograph 35

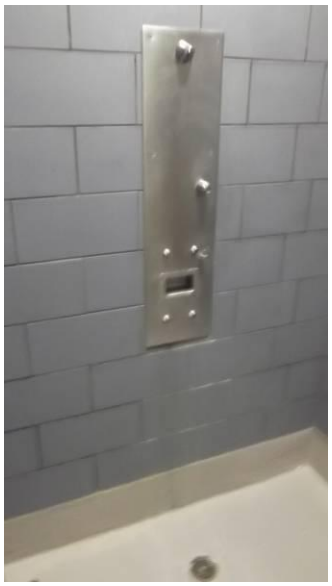
View of typical kitchen/lunch room

Photograph 36

View of the basement level corridor in the police department area

Photograph 37

View of the basement level police department holding area

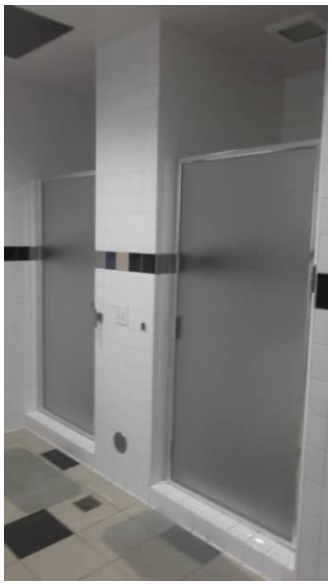


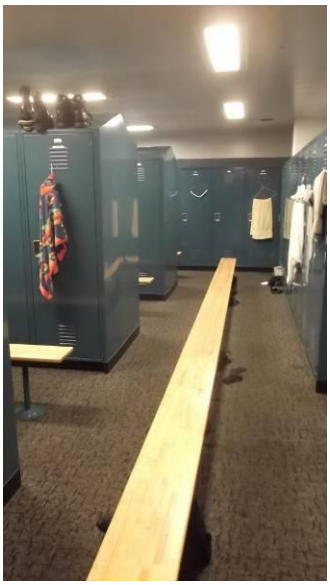
Photographs 38A & 38B

View of police department holding cell plumbing fixtures

Photograph 39

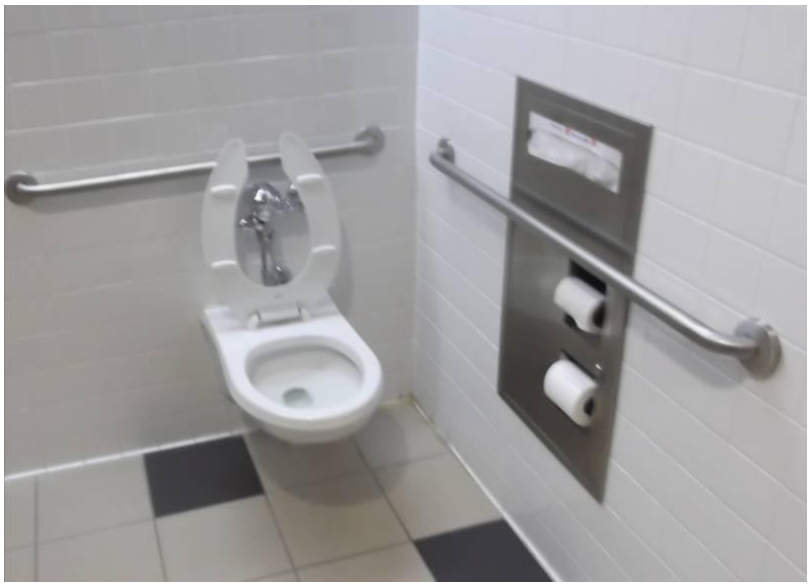
View of typical restroom plumbing fixtures





Photographs 40A & 40B

View of typical locker room showers and locker area

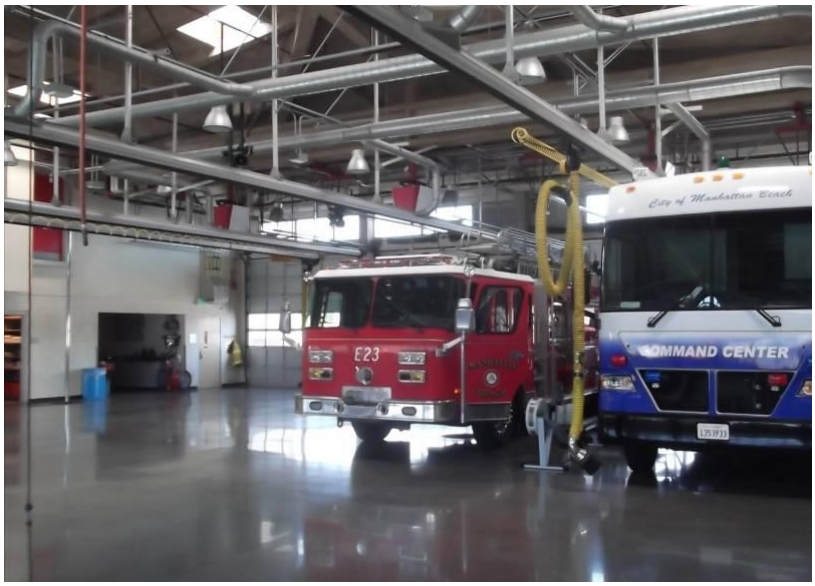


Photograph 41

View of typical disable accessible water closet

Photograph 42

View of the basement level pistol firing range



Photograph 43

View of the fire department apparatus bays

Photograph 44

View of the fire department apparatus bays and overhead doors

Photograph 45

View of typical office in the fire department portion of the building

Photograph 46

View of the fire department hose tower stair

Photograph 47

View of the fire department living area kitchen

Photograph 48

View of the fire department living area locker / shower room

Photograph 49

View of the fire department living area bedroom

Photograph 50

View of a typical stairwell

Photograph 51

View of the elevator entrance at the first floor

Photograph 52

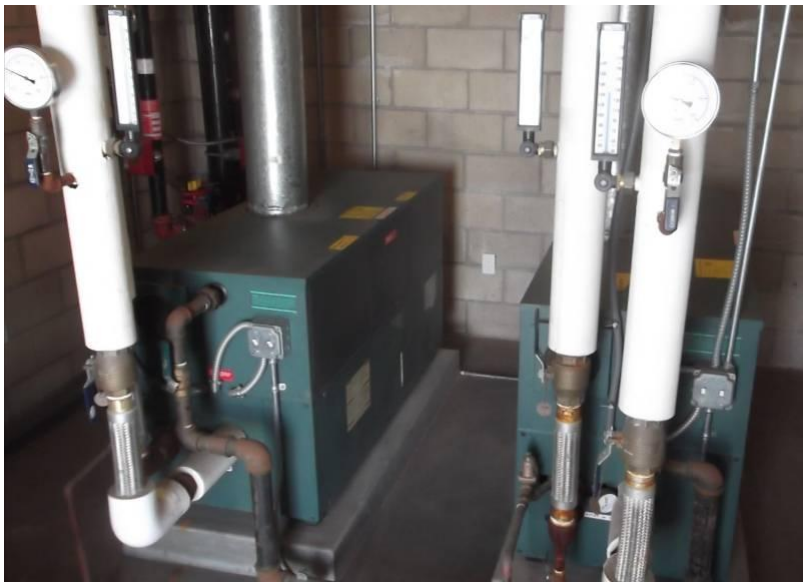
View of one of the domestic water heating boilers

Photograph 53

View of a typical drainage line in the parking garage

Photograph 54

View of typical plumbing fixtures



Photograph 55

View of the heating system boilers

Photograph 56

View of the heating system hot water pumps

Photograph 57

View of one of the cooling system chillers

Photograph 58

View of the cooling system water pumps

Photograph 59

View of rooftop cooling towers

Photograph 60

View of the typical rooftop air handling units

Photograph 61

View of the rooftop split system condensing units

Photograph 62

View of a typical split system interior fan-coil unit

Photograph 63

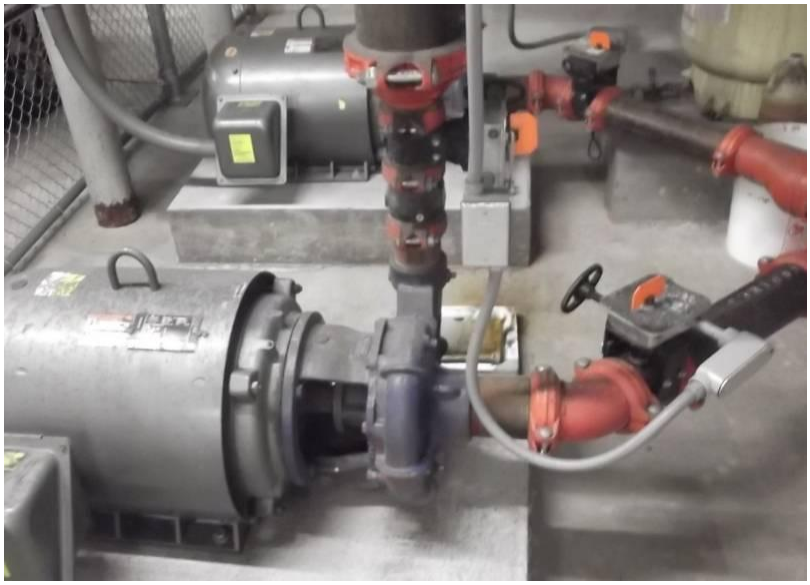
View of a typical rooftop exhaust fan

Photograph 64

View of the fire department apparatus bays' vehicle exhaust system fan

Photographs 65A & 65B

View of typical fire sprinkler system risers



Photograph 66

View of the fire hose testing water pumps

Photographs 67A & 67B

View of the main electrical room switchgear

Photograph 68

View of typical emergency lighting fixture and illuminated exit sign

Photograph 69

View of the emergency electrical generator and fuel tank located at the south end of the surface parking deck

Appendix C

Asset Inventory

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

D20 PLUMBING

Location	Equipment Type	Manufacturer	Model #	Serial #	Fuel / Rating	Capacity	≈ Year of Installation
1st Floor Utility Room (Public Safety Bldg)	Domestic Water Heater w/Pump	Lochinvar	300 PMF-7 EWN300PM	E05H00E H176174	Nat. Gas / 300 Mbh	305 GPH Recovery	2006
1st Floor Utility Room	Domestic Hot Water Tank	Lochinvar	RGA03183	Unknown	NA	300 Gal Assumed	2006
2nd Floor Utility Room (Fire Station)	Domestic Water Heater w/Pump	Lochinvar	200 PMF-7	Unknown	Nat. Gas / 200 Mbh	198 GPH	2006
2nd Floor Utility Room	Domestic Hot Water Tank	Lochinvar	Unknown	Unknown	NA	200 Gal Assumed	2006
Basement Enclosure	Duplex Sump Pumps	Unknown	Unknown	Unknown	1 HP Pumps	50 GPM	2006
Basement Enclosure	Duplex Sump Pumps (Fire Hose Testing)	Unknown	Unknown	Unknown	7.5 HP Pumps	600 GPM	2006
Basement Enclosure	Duplex Sewage Ejectors	Unknown	Unknown	Unknown	2 HP Pumps	50 GPM Each	2006

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

D30 HVAC

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Roof	Cooling Tower #1 w/Pumps	Delta	T-75	6456-1	225 GPM / 7.5 HP / 75 Tons	NA	2005
Roof	Cooling Tower #2 w/Pumps	Delta	T-75	Unknown	225 GPM / 7.5 HP / 75 Tons	NA	2005
Roof	Air Handling Unit (#2)	Carrier	39MW36B00 58NR11XXS	2505F17465	16,000 CFM	Elec	2005
Roof	Air Handling Unit (#3)	Carrier	39MW36B00 58NR11XXS	2505F17466	16,000 CFM	Elec	2005
Roof	Air Handling Unit (#4)	Carrier	39MW30B00 58NS11XXS	2505F17395	15,000 CFM	Elec	2005
1st Floor Utility Room	Screw-Type Chiller	Carrier	30HXC096R 661AA	1405Q04988	80-85 Tons	Elec	2005
1st Floor Utility Room	Screw-Type Chiller	Carrier	30HXC096R 661AA	1405Q04989	80-85 Tons	Elec	2005
1st Floor Utility Room	(2) Condenser Water Pumps	Bell & Gossett	4BC / 4BC	C00721101J50 / C00721102J50	500 GPM / 10 HP	Elec	2006
1st Floor Utility Room	(2) Chilled Water Pumps	Bell & Gossett	4BC / 4BC	C00721001J50 / C00721002J50	400 GPM / 15 HP	Elec	2006
1st Floor Utility Room	Boiler	RayPak	HBH065Q2A	0504235051	650 MBTUH	Nat. Gas	2006
1st Floor Utility Room	Boiler	RayPak	HBH065Q2A	0504235050	650 MBTUH	Nat. Gas	2006
1st Floor Utility Room	(2) Hot Water Pumps	Bell & Gossett	15BC / 15BC	C00721201J50 / C00721202J50	50 GPM / 3 HP	Elec	2006
1st and 2nd Floors' Plenum	Variable Air Volume Units	Unknown	Unknown	Unknown	Unknown (Some with hot water re-heat)	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2-3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2-3 Tons Assumed	Elec	2006

FAITHFUL + GOULD

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	38BNE 024301	Unknown	2 Tons	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2–3 Tons Assumed	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32665	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNH 012300	0505Y30431	250-300 CFM / 1/48 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	Unknown	Unknown	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32660	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32668	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32670	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y30595	250-300 CFM / 1/50 HP	Elec	2006
2nd Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	40QNE 009100	0905Y32667	250-300 CFM / 1/50 HP	Elec	2006
Roof	Supply Air Fan	Cook	50 ASP	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan	Cook	70ACE	Unknown	Unknown	Elec	2006
Roof	Supply Air Fan	Cook	120AGE	Unknown	Unknown	Elec	2006

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Roof	Exhaust Fan	Cook	70ACE	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan (#9)	Cook	245VCRX 245VX3B	133S80862700	1.5 HP / 2,100 CFM	Elec	2004
Roof (Kitchen)	Evaporative Cooler (MUA-1)	Unknown	Unknown	Unknown	2,400 CFM	Elec	2005
1st Floor Apparatus Bays	(2) Hot Water Unit Heaters	Modyne	Unknown	Unknown	1,500 CFM	Elec. / Hot Water	2006
1st Floor Apparatus Bays & Roof	Vehicle Exhaust System	PlymoVent	Unknown	Unknown	Unknown	Elec	2006
First Floor Utility Room	Air Handling Unit (#1)	Carrier	39LD12GA	1905000872	5,000 CFM	Elec	2006
Roof	Split System Condenser	Carrier	Unknown	Unknown	2 Tons	Elec	2006
Roof	Exhaust Fan	Cook	Unknown	Unknown	Unknown	Elec	2006
Roof	Split System Condenser	Carrier	38BNE 024301	1105V98199	2 Tons	Elec	2006
1st Floor Sleeping Quarters	Split System Fan-Coil Unit	Carrier	Unknown	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan (#16)	Cook	100ACW 100W2B	138S812963	500 CFM	Elec	2004
Roof	Exhaust Fan (#24)	Cook	70ACE 70C2B	138S808627	200 CFM	Elec	2004
Utility Building Roof	(3) Exhaust & (2) Supply Air Fans	Cook / Unknown	Unknown	Unknown	Unknown	Elec	2006
Roof	Exhaust Fan (#32)	Cook	70ACE 70C2B	Unknown	200 CFM	Elec	2004
Roof	Exhaust Fan	Cook	Unknown	Unknown	400 CFM	Elec	2004
Roof	Split System Condenser (CU-1)	Data Aire	ZR47K3 TFD235	05HA9932L	0.75 HP	Elec	2006
Roof	Exhaust Fan (#20)	Cook	80ACE 80C2B	138S808627	400 CFM	Elec	2004

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
1st Floor Utility Room	Exhaust Fan (#7)	Cook	180CPF 1800PFB	138S808627	5000 CFM	Elec	2004
Basement Utility Room	Supply Air Fan (#3)	Cook	245CPV 2450PV	138S8086270	8000 CFM	Elec	2006
Basement Utility Room	Exhaust Fan (#34)	York	Unknown	Unknown	15 HP	Elec	2006
Basement Utility Room	Exhaust Fan (#4)	Unknown	Unknown	Unknown	Unknown	Elec	2006
Basement Utility Room	Exhaust Fan (#5)	Unknown	Unknown	Unknown	Unknown	Elec	2006

Unknown = Access limited or equipment had no name plates present.
Assumed = Based on size of unit and area it serves / or possible year installed.

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

D40 FIRE PROTECTION

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Basement Enclosure	(2) Fire Hose Training Water Pumps	Lincoln	SF2P60T JP61Y	Unknown	60 HP	Elec	2006
Basement Enclosure	Air Compressor (Apparatus Bays)	Ingersoll Rand	06032 90044	Unknown	Unknown	Elec	2006

ASSET INVENTORY

Public Safety Building and Fire Station No. 2

G40 SITE ELECTRICAL UTILITIES

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year
Exterior Parking Lot	Generator	Caterpillar	3412	Unknown	1,000 KVA / 800 KW	Diesel	2004
Exterior Parking Lot	Generator Fuel Tank	Unknown	Unknown	Unknown	6,000 Gal	NA	2004
Basement Electrical Room	Transfer Switch	Asco	7000-Series	Unknown	1,600-Amps	NA	2004

Appendix D

Document Review and
Warranty Information

DOCUMENT REVIEW & WARRANTY INFORMATION

Public Safety Building & Fire Station No. 1

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:

Construction Drawings; Hellmuth, Obata + Kassabaum, Inc., with WLC Architects, KPFF Civil Engineers, John A. Martin & Associates, Inc. Structural Engineers, L.H. Hajnal & Associates MEP Engineers, Katherine Spitz Associates, Inc. Landscape Architect, and Iskander Associates, Inc. Cost Consultant; dated January 6, 2004

Comprehensive Energy Audit; PE Consulting; dated October 13, 2009

Roofing Evaluation Report; Tremco Inc.; dated June 4, 2013

Appendix E

Glossary of Terms

FAITHFUL+GOULD

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 = Thickness(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.