FACILITY CONDITION ASSESSMENT & ENERGY AUDIT

prepared for

City of Glendora
116 East Foothill Boulevard
Glendora, California 91741
Michael Sledd

San Gabriel Water Yard/Plant
625 West Hidden Valley Drive
Glendora, California 91702

PREPARED BY:
Bureau Veritas
6021 University Boulevard, Suite 200
Ellicott City, Maryland 21043
800.733.0660
www.us.bureauveritas.com

BV CONTACT:
Mary Venable
Program Manager
800.733.0660 x7292719
mary.venable@bureauveritas.com

BV PROJECT #:
158691.23R000-001.379

DATE OF REPORT:
February 16, 2024

ON SITE DATE:
December 12, 2023

TABLE OF CONTENTS

1. Executive Summary

Campus Overview and Assessment Details

General Information	
Property Type	Water Yard
Number of Buildings	Six
Main Address	625 West Hidden Valley Drive, Glendora, California 91702
Site Developed	1920 Renovated 2013
Current Occupants	City of Glendora
Date(s) of Visit	December 12, 2023
Management Point of Contact	City of Glendora, Ryan Hacecky, Facilities Maintenance Supervisor 626.672.6306 rhacecky@cityofglendora.org
On-site Point of Contact (POC)	Ron Nichka
Assessment and Report Prepared By	Carl Alejandro
Reviewed By	Usama Anwar Technical Report Reviewer For Mary Venable Program Manager mary.venable@bureauveritas.com 800.733.0660 x7292719
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Campus Findings and Deficiencies

Historical Summary

The San Gabriel Water Yard/Plant property was originally constructed in 1920. The New Booster Building and New Warehouse were constructed in 2013. The original booster building is now used for storage, and the original warehouse is used as a well building.

Architectural

The roofs of the New Booster Building and New Warehouse are original to the 2013 construction date and appear to be in overall fair condition. The roofs of the Well Sheds also appear to be in adequate condition. The roofs of Well Building #12E and Storage Building reportedly have a history of on-going roof leaks. This has caused the wooden roof frame structure to rot in isolated locations. Repair/replacement of the roofs and wood frame are recommended in the near reserve term. Exterior walls are painted on a regular basis. CMU cracking was observed on the western exterior wall of Well Building #12E and is recommended for repair. Concrete cracking was also observed on the basement wall of the chlorine room in the New Booster Building. The basement wall was not sealed properly and has experienced leaks during rainstorms. A cost for repair has been included in the capital planning database.

The only area with interior finishes is the office/break room in the New Warehouse. These finishes are replaced on an as needed basis. Interior concrete floor cracking was observed in the Storage Building. Repair of these cracks is recommended during the reserve term.

Mechanical, Electrical, Plumbing and Fire (MEPF)

The office/break room of the New Warehouse is the only area that is conditioned by an HVAC system. It utilizes a ductless split system heat pump that was installed in 2022 and is in good condition. Most of the other buildings are ventilated by rooftop exhaust fans. The electrical system is controlled by switchboards and distribution panels in each of the buildings.

There is an emergency diesel generator next to the New Booster Building that was installed in 2017. According to the point of contact, it is undersized and only able to run half of the facility. A cost allowance to install an additional generator has been included in the capital planning database. There is also a cost to install additional security cameras for the facility due to recent break-ins.

Domestic hot water is supplied to the office/break room by an instant hot water heater. Typical plumbing fixtures are utilized in the restroom.

Fire suppression consists of individual fire extinguishers and nearby fire hydrants.

Site

The asphalt paved lot appears to have been repaved in recent years and exhibits little to no cracking. The point of contact reported an issue with site lighting near the New Warehouse. The building mounted lights are recommended for repair or replacement during the reserve term. There is mature tree growth on the eastern side of the New Warehouse that is coming into contact with the roof. Trimming or tree removal is recommended.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate each building's Facility Condition Index (FCI), which provides a theoretical objective indication of a building's overall condition. By definition, the FCI is defined as the ratio of the cost of current needs divided by current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

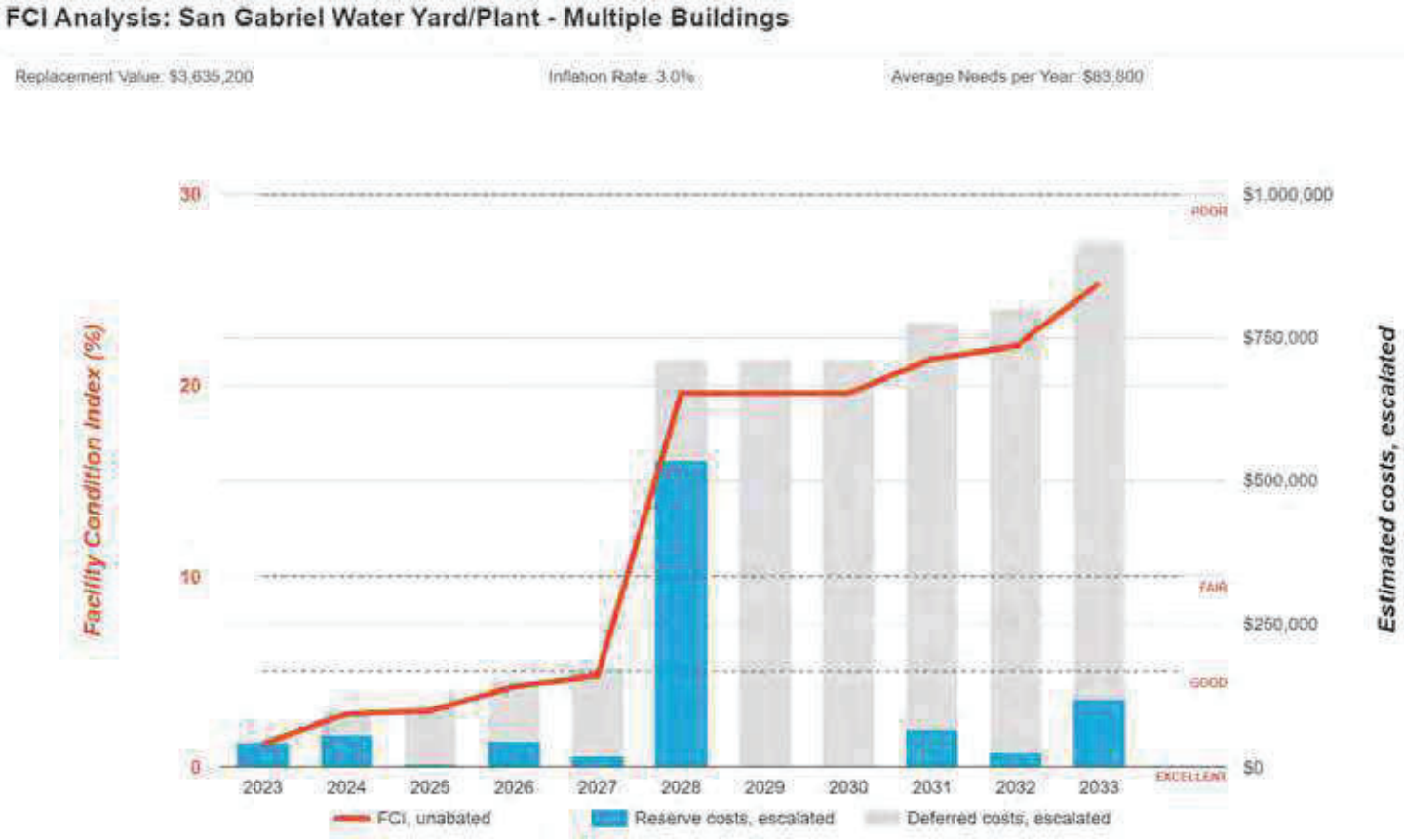
FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little or no visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone values. The table below summarizes the individual findings for this FCA:

Facility (year built)	Cost/SF	Total SF	Replacement Value	Current	3-Year	5-Year	10-Year
San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Building #12E	$300	850	$255,000	0.0%	9.0%	9.0%	23.0%
San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #8E	$300	70	$21,000	0.0%	0.0%	8.1%	9.5%
San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #9E	$300	70	$21,000	0.0%	0.0%	8.1%	32.4%
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters (2013)	$375	4,764	$1,786,500	0.9%	0.9%	29.2%	32.8%
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Warehouse (2013)	$375	3,200	$1,200,000	0.0%	0.2%	2.5%	4.9%
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Storage Building	$300	1,200	$360,000	7.4%	17.7%	17.7%	20.7%

The vertical bars below represent the year-by-year needs identified for the site. The orange line in the graph below forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year (blue bars) are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



Immediate Needs

Facility/Building	Total Items	Total Cost
San Gabriel Water Yard/Plant - Multiple Buildings / Site	1	$2,200
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters	1	$15,600
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Storage Building	1	$26,800
Total	**3**	**$44,600**

Site

ID	Location	Location Description	UF Code	Description	Condition	Plan Type	Cost
7164647	San Gabriel Water Yard/Plant - Multiple Buildings / Site	Site	G2080	Landscaping, Mature Trees, Removal/Trimming, Repair	Poor	Performance/Integrity	$2,200
Total (1 items)							**$2,200**

Yard - New Booster Building and Boosters

ID	Location	Location Description	UF Code	Description	Condition	Plan Type	Cost
7164635	San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters	Chlorine Room	B1010	Structural Flooring/Decking, Concrete, Repair	Poor	Performance/Integrity	$15,600
Total (1 items)							**$15,600**

Yard - Storage Building

ID	Location	Location Description	UF Code	Description	Condition	Plan Type	Cost
7164692	San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Storage Building	Storage Building (Old Booster Building)	B1010	Structural Flooring/Decking, Concrete, Repair	Poor	Performance/Integrity	$26,800
Total (1 items)							**$26,800**

Key Findings

Structural Flooring/Decking in Poor condition.

Concrete
Yard - Storage Building San Gabriel Water Yard/Plant - Multiple Buildings Storage Building (Old Booster Building)

Uniformat Code: B1010
Recommendation: **Repair in 2023**

Priority Score: **89.9**

Plan Type: Performance/Integrity

Cost Estimate: $26,800

**$$$**$

Concrete floor cracking in northern half of building - AssetCALC ID: 7164692

Structural Flooring/Decking in Poor condition.

Concrete
Yard - New Booster Building and Boosters San Gabriel Water Yard/Plant - Multiple Buildings Chlorine Room

Uniformat Code: B1010
Recommendation: **Repair in 2023**

Priority Score: **89.9**

Plan Type: Performance/Integrity

Cost Estimate: $15,600

**$$$**$

Flooding leaks on back of chlorine room. Concrete wall is below ground level and not sealed properly. - AssetCALC ID: 7164635

Roofing in Poor condition.

Single-Ply Membrane, EPDM
Yard - Storage Building San Gabriel Water Yard/Plant - Multiple Buildings Storage Building (Old Booster Building)

Uniformat Code: B3010
Recommendation: **Replace in 2024**

Priority Score: **88.9**

Plan Type: Performance/Integrity

Cost Estimate: $19,600

**$$$**$

Roof leaks - AssetCALC ID: 7164691

Roofing in Poor condition.

Single-Ply Membrane, EPDM
Plant - Well Building #12E San Gabriel Water Yard/Plant - Multiple Buildings Roof

Uniformat Code: B3010
Recommendation: **Replace in 2024**

Priority Score: **88.9**

Plan Type: Performance/Integrity

Cost Estimate: $13,900

**$$$**$

Ongoing roof leaks - AssetCALC ID: 7164598

Structural Framing in Poor condition.

Wood, Conventional Stud
Plant - Well Building #12E San Gabriel Water Yard/Plant - Multiple Buildings Structure

Uniformat Code: B1010
Recommendation: **Conventional Stud in 2024**

Priority Score: **88.9**

Plan Type: Performance/Integrity

Cost Estimate: $5,400

**$$**$$

Roof leaks have caused wood rot to the roof structure. - AssetCALC ID: 7164596

Structural Framing in Poor condition.

Wood, Conventional Stud
Yard - Storage Building San Gabriel Water Yard/Plant - Multiple Buildings Storage Building (Old Booster Building)

Uniformat Code: B1010
Recommendation: **Conventional Stud in 2024**

Priority Score: **88.9**

Plan Type: Performance/Integrity

Cost Estimate: $16,100

**$$$**$

Roof leaks have caused wood rot to the roof structure - AssetCALC ID: 7164684

Exterior Walls in Poor condition.

Concrete Block (CMU)
Plant - Well Building #12E San Gabriel Water Yard/Plant - Multiple Buildings Building Exterior

Uniformat Code: B2010
Recommendation: **Replace in 2025**

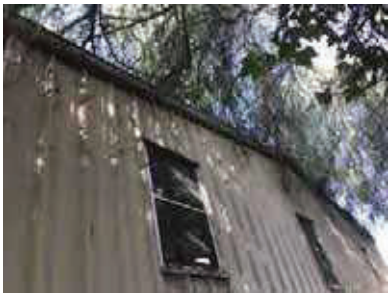
Priority Score: **88.8**

Plan Type: Performance/Integrity

Cost Estimate: $3,000

**$$**$$

Cracking on original CMU wall side - AssetCALC ID: 7164600



Landscaping in Poor condition.

Mature Trees, Removal/Trimming
Site San Gabriel Water Yard/Plant - Multiple Buildings Site

Uniformat Code: G2080
Recommendation: **Repair in 2023**

Priority Score: **81.9**

Plan Type: Performance/Integrity

Cost Estimate: $2,200

**$$**$$

Mature tree growth on eastern side of building - AssetCALC ID: 7164647

Exterior Fixture w/ Lamp in Poor condition.

any type, w/ LED Replacement
Yard - New Warehouse San Gabriel Water Yard/Plant - Multiple Buildings Building exterior

Uniformat Code: G4050
Recommendation: **Replace in 2025**

Priority Score: **81.8**

Plan Type: Performance/Integrity

Cost Estimate: $2,700

**$$**$$

Metal halide bulbs are burnt out. - AssetCALC ID: 7164648

IMAGE NOT AVAILABLE

Generator

Diesel, 760 to 1000 KW
Yard - New Booster Building and Boosters San Gabriel Water Yard/Plant - Multiple Buildings Building exterior

Uniformat Code: D5010
Recommendation: **Replace in 2028**

Priority Score: **61.6**

Plan Type: Retrofit/Adaptation

Cost Estimate: $416,600

$$$$

According to the point of contact, the current generator is undersized and can only run half the plant. This is a cost allowance to install an additional generator. - AssetCALC ID: 7187092

IMAGE NOT AVAILABLE

Security Camera

Closed Circuit Exterior, Fixed Color
Site San Gabriel Water Yard/Plant - Multiple Buildings Site

Uniformat Code: D7030
Recommendation: **Replace in 2026**

Priority Score: **54.7**

Plan Type: Retrofit/Adaptation

Cost Estimate: $42,100

**$$$**$

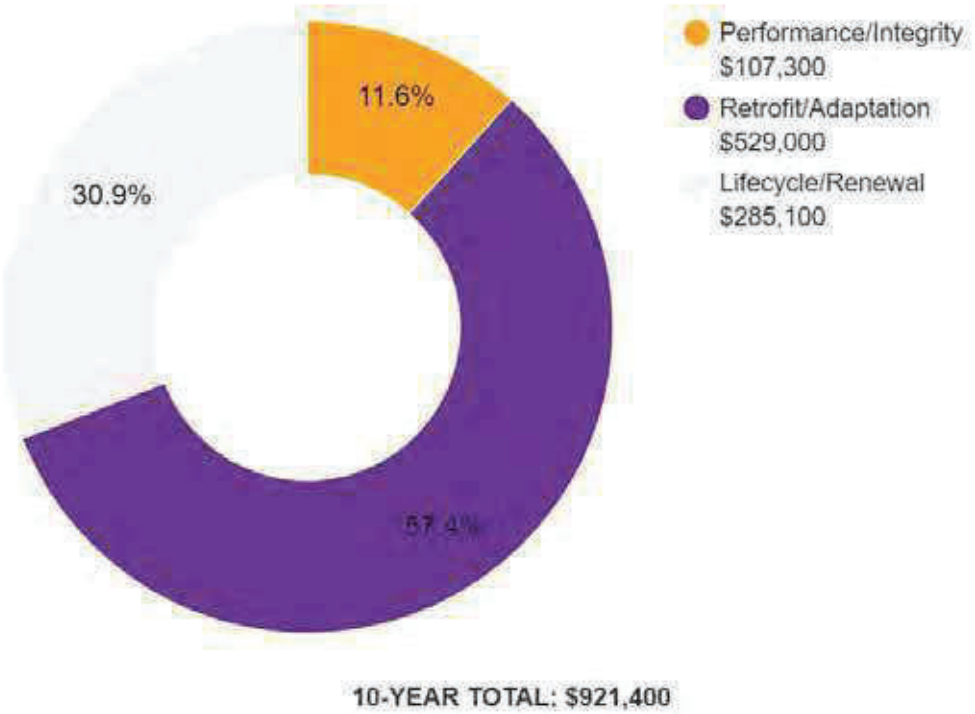
This is a cost allowance to install additional cameras to improve security. - AssetCALC ID: 7187093

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the "why" part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the "best" fit, typically the one with the greatest significance.

Plan Type Descriptions		
Safety	■	An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity	■	Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility	■	Does not meet ADA, UFAS, and/or other handicap accessibility requirements.
Environmental	■	Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation	■	Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Lifecycle/Renewal	■	Any component or system that is not currently deficient or problematic but for which future replacement or repair is anticipated and budgeted.

Plan Type Distribution (by Cost)



2. Plant – Well building NO.12E

Plant – Well Building #12E: Systems Summary		
Address	625 West Hidden Valley Drive; Glendora, California	
Constructed/Renovated	1920	
Building Size	850 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Masonry bearing walls and wood framed roof	Poor
Façade	Painted CMU and wood siding	Poor
Roof	Primary: Flat construction with single-ply EPDM membrane	Poor
Interiors	Walls: Unfinished Floors: Unfinished Ceilings: Unfinished	--
Elevators	None	--
Plumbing	None	--
HVAC	Roof mounted exhaust fans	Fair

Plant – Well Building #12E: Systems Summary

Fire Suppression	Fire extinguishers only	Fair
Electrical	Source & Distribution: Motor control center with copper wiring Interior Lighting: T-12 Emergency: none	Fair
Fire Alarm	None	--
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	Roof leaks, roof frame wood rotting, exterior CMU cracking	

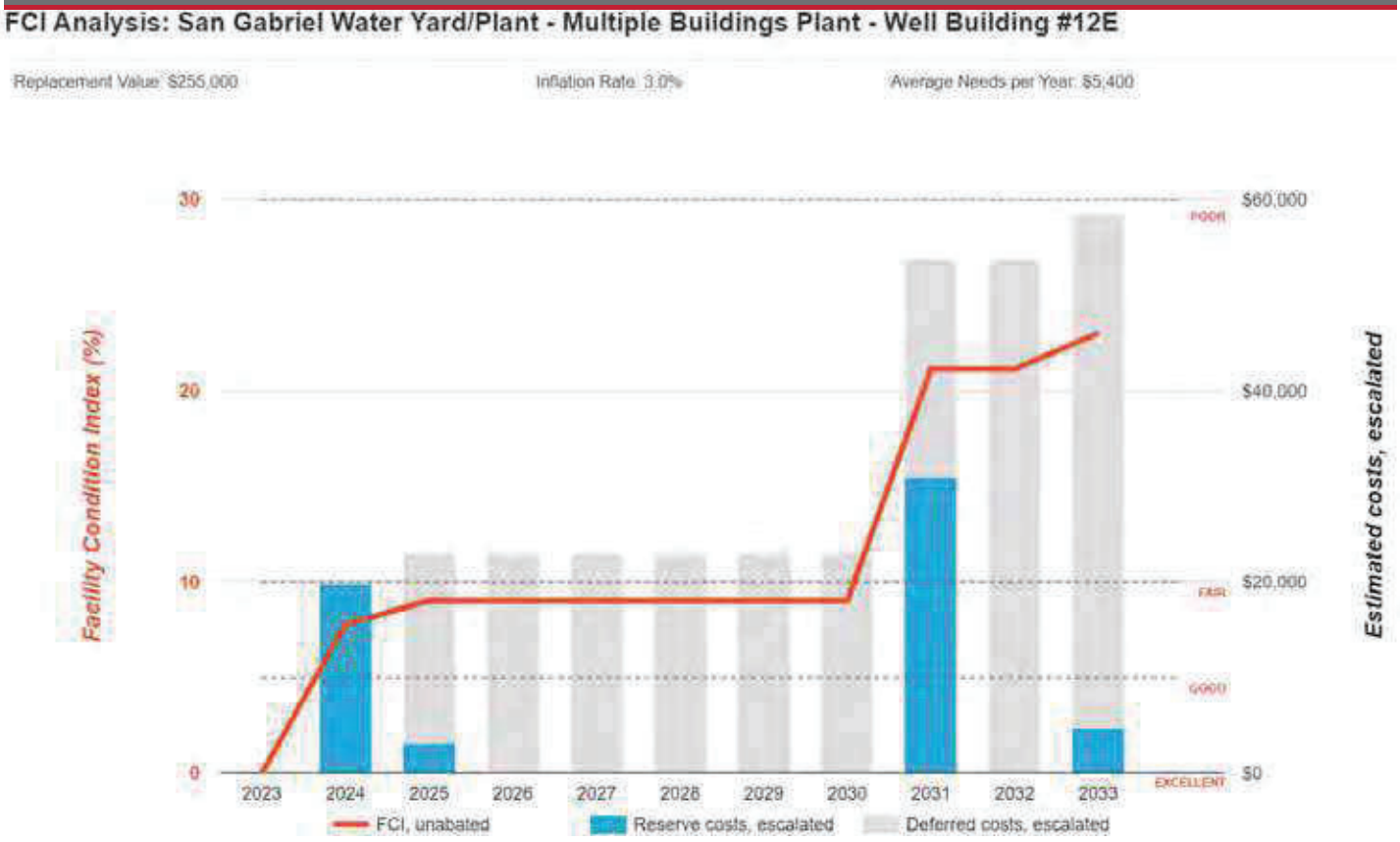
Plant – Well Building #12E: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	-	$5,500	-	-	-	$5,500
Facade	-	$3,200	-	-	$13,700	$16,800
Roofing	-	$14,300	-	-	-	$14,300
HVAC	-	-	-	$2,600	-	$2,600
Electrical	-	-	-	$31,800	$29,700	$61,500
Site Utilities	-	-	-	$1,200	-	$1,200
TOTALS (3% inflation)	**-**	**$23,000**	**-**	**$35,700**	**$43,300**	**$102,000**

*Totals have been rounded to the nearest $100.

The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



3. Well Shed NO.8E

Well Shed #8E: Systems Summary

Address	625 West Hidden Valley Drive; Glendora, California	
Constructed/Renovated	1920	
Building Size	70 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Prefabricated steel frame structure	Good
Façade	Metal siding	Fair
Roof	Gable construction with metal finish	Fair
Interiors	Walls: Unfinished Floors: Unfinished Ceilings: Unfinished	--
Elevators	None	--
Plumbing	None	--
HVAC	Roof mounted exhaust fan	Fair

Well Shed #8E: Systems Summary

Fire Suppression	None	--
Electrical	Source and Distribution: Fed from Storage Building with copper wiring Interior lighting: T-8 Emergency: none	Fair
Fire Alarm	None	--
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	No key issues observed	

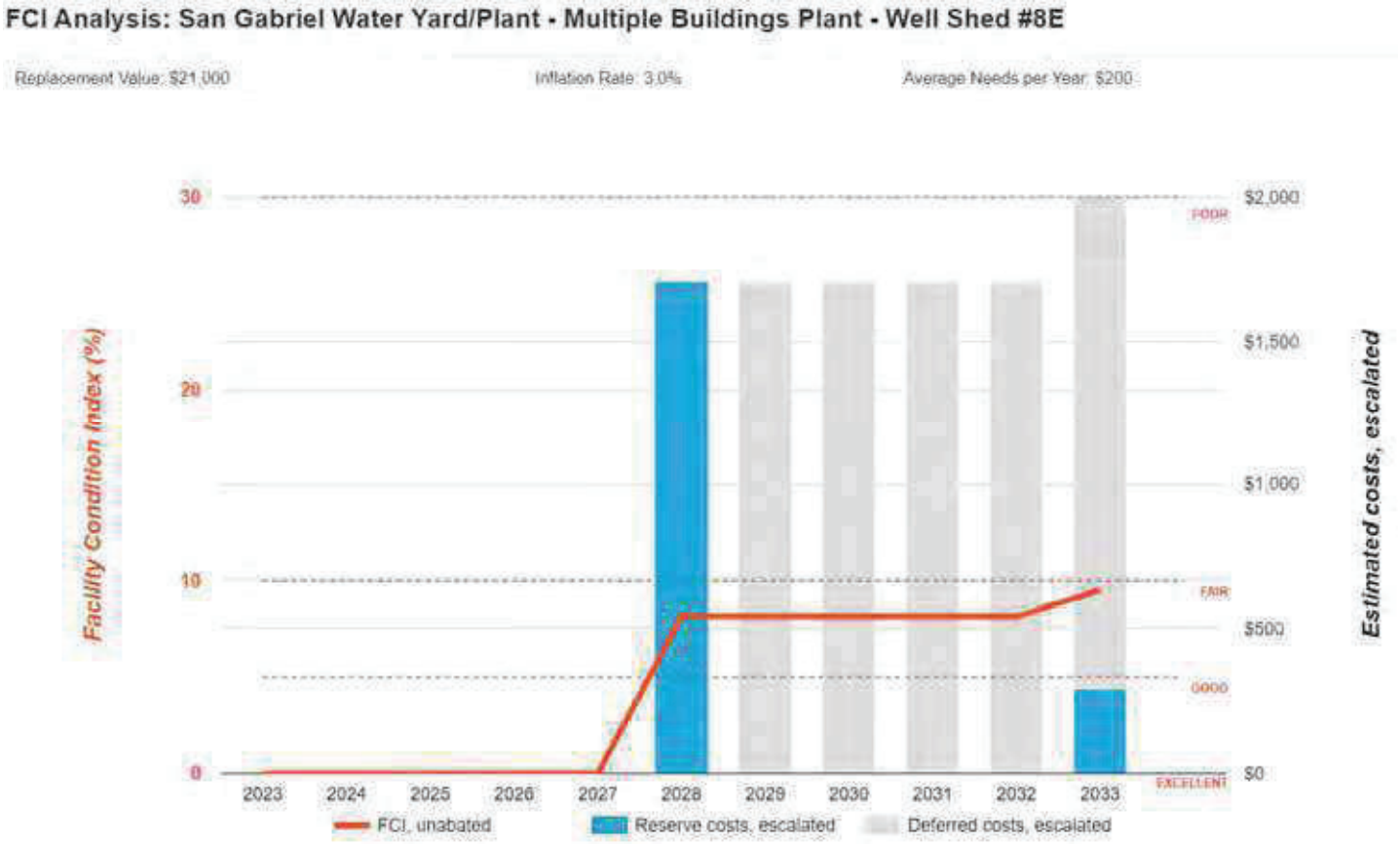
Well Shed #8E: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Facade	-	-	$1,700	-	$3,900	$5,600
Roofing	-	-	-	-	$2,400	$2,400
HVAC	-	-	-	-	$5,200	$5,200
Electrical	-	-	-	$300	$2,400	$2,700
TOTALS (3% inflation)	**-**	**-**	**$1,700**	**$300**	**$14,000**	**$16,000**

*Totals have been rounded to the nearest $100.

The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



4. Well Shed NO.9E

Well Shed #9E: Systems Summary

Address	625 West Hidden Valley Drive; Glendora, California	
Constructed/Renovated	1920	
Building Size	70 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Prefabricated steel frame structure	Good
Façade	Metal siding	Fair
Roof	Gable construction with metal finish	Fair
Interiors	Walls: Unfinished Floors: Unfinished Ceilings: Unfinished	--
Elevators	None	--
Plumbing	None	--
HVAC	Roof mounted exhaust fan	Fair

Well Shed #9E: Systems Summary

Fire Suppression	None	--
Electrical	Source and Distribution: Fed from Storage Building with copper wiring Interior lighting: T-8 Emergency: none	Fair
Fire Alarm	None	--
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	No key issues observed	

Well Shed #9E: Systems Expenditure Forecast

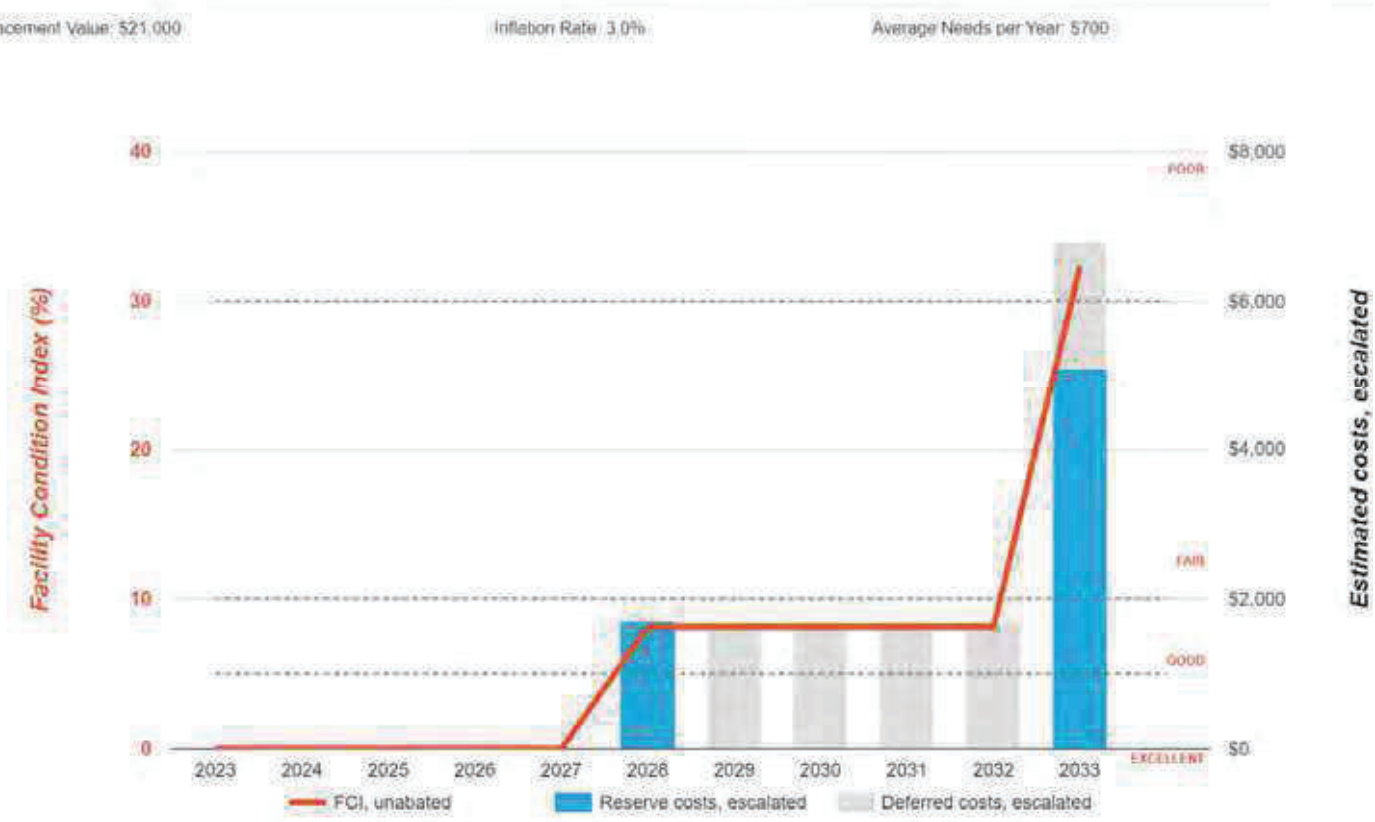
System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Facade	-	-	$1,700	-	$3,900	$5,600
Roofing	-	-	-	-	$2,400	$2,400
HVAC	-	-	-	$4,800	-	$4,800
Electrical	-	-	-	$300	$2,400	$2,700
TOTALS (3% inflation)	-	-	**$1,700**	**$5,100**	**$8,800**	**$15,600**

*Totals have been rounded to the nearest $100.

The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

FCI Analysis: San Gabriel Water Yard/Plant - Multiple Buildings Plant - Well Shed #9E



5. Yard – New Booster Building and Boosters

Yard – New Booster Building and Boosters: Systems Summary

Address	625 West Hidden Valley Drive; Glendora, California	
Constructed/Renovated	2013	
Building Size	4,764 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Masonry bearing walls and steel framed roof on concrete slab	Poor
Façade	Painted CMU	Fair
Roof	Gable construction with metal finish	Good
Interiors	Walls: Unfinished Floors: Unfinished Ceilings: Unfinished	--
Elevators	None	--
Plumbing	None	--
HVAC	Roof mounted exhaust fans	Fair

Yard – New Booster Building and Boosters: Systems Summary

Fire Suppression	Fire extinguishers only	Fair
Electrical	Source & Distribution: Main switchboard with copper wiring Interior Lighting: T-8 Emergency: none	Fair
Fire Alarm	None	--
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	Concrete wall leaks in chlorine room	

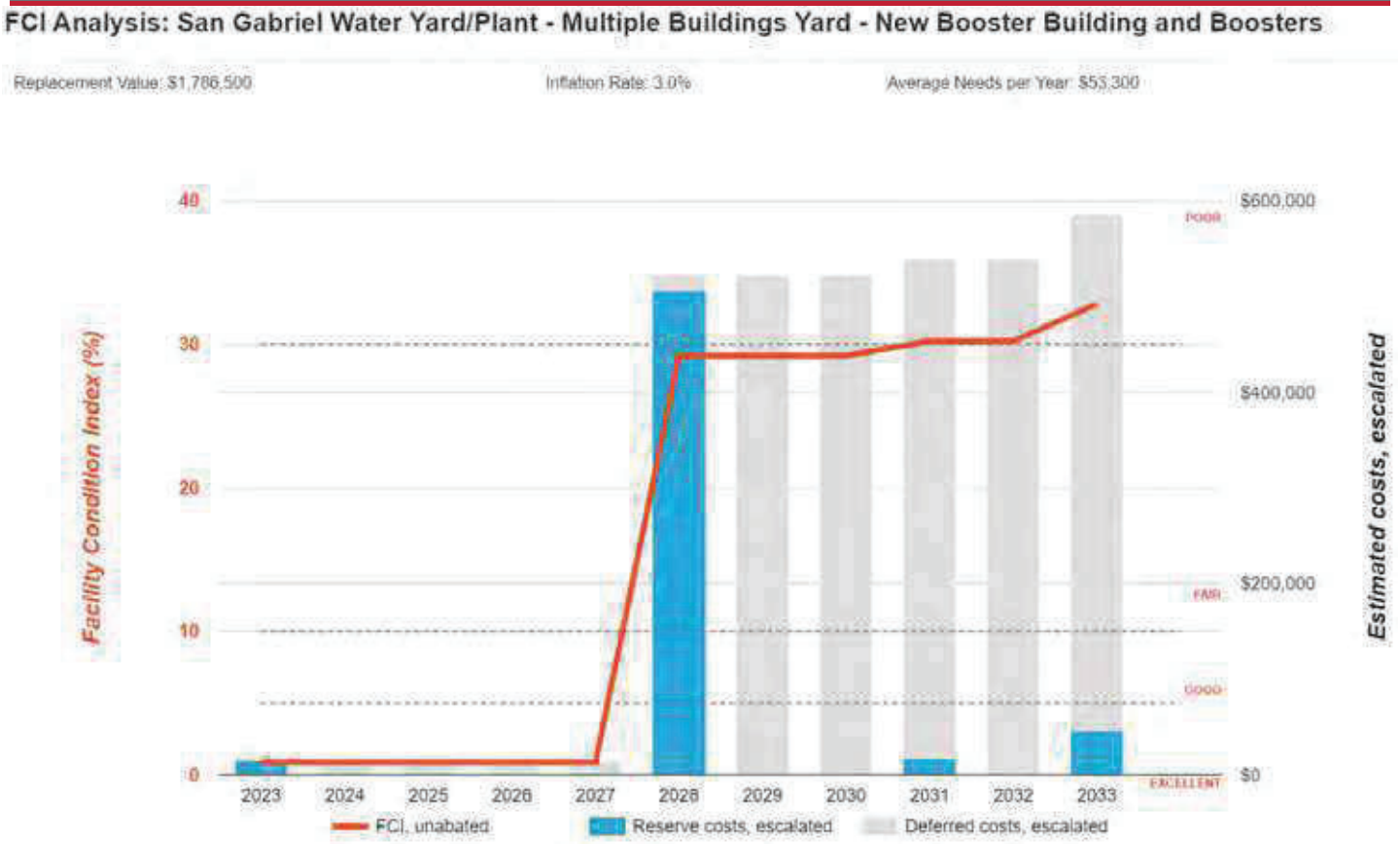
Yard – New Booster Building and Boosters: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$15,600	-	-	-	-	$15,600
Facade	-	-	$23,300	-	$129,400	$152,600
Roofing	-	-	-	-	$62,900	$62,900
Plumbing	-	-	-	-	$86,900	$86,900
HVAC	-	-	-	$21,600	-	$21,600
Electrical	-	-	$482,900	$20,000	$946,300	$1,449,200
Fire Alarm & Electronic Systems	-	-	-	$18,000	-	$18,000
Site Utilities	-	-	-	$4,800	-	$4,800
TOTALS (3% inflation)	**$15,600**	**-**	**$506,200**	**$64,300**	**$1,205,500**	**$1,791,600**

*Totals have been rounded to the nearest $100.

The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



6. Yard – New Warehouse

Yard – New Warehouse: Systems Summary

Address	625 West Hidden Valley Drive; Glendora, California	
Constructed/Renovated	2013	
Building Size	3,200 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Steel frame on concrete slab	Good
Façade	Metal siding	Good
Roof	Gable construction with metal finish	Good
Interiors	Walls: Painted gypsum board Floors: Sealed concrete Ceilings: Painted gypsum board	Fair
Elevators	None	--
Plumbing	Copper supply and cast iron waste & venting Instant hot water heater Toilet and sink in restroom	Good
HVAC	Individual ductless split system heat pump Supplement components: roof mounted exhaust fans	Good

Yard – New Warehouse: Systems Summary

Fire Suppression	Fire extinguishers only	Fair
Electrical	Source & Distribution: Main switchboard with copper wiring Interior Lighting: T-8 Emergency: none	Fair
Fire Alarm	Smoke detectors	Fair
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	Exterior lights not working	

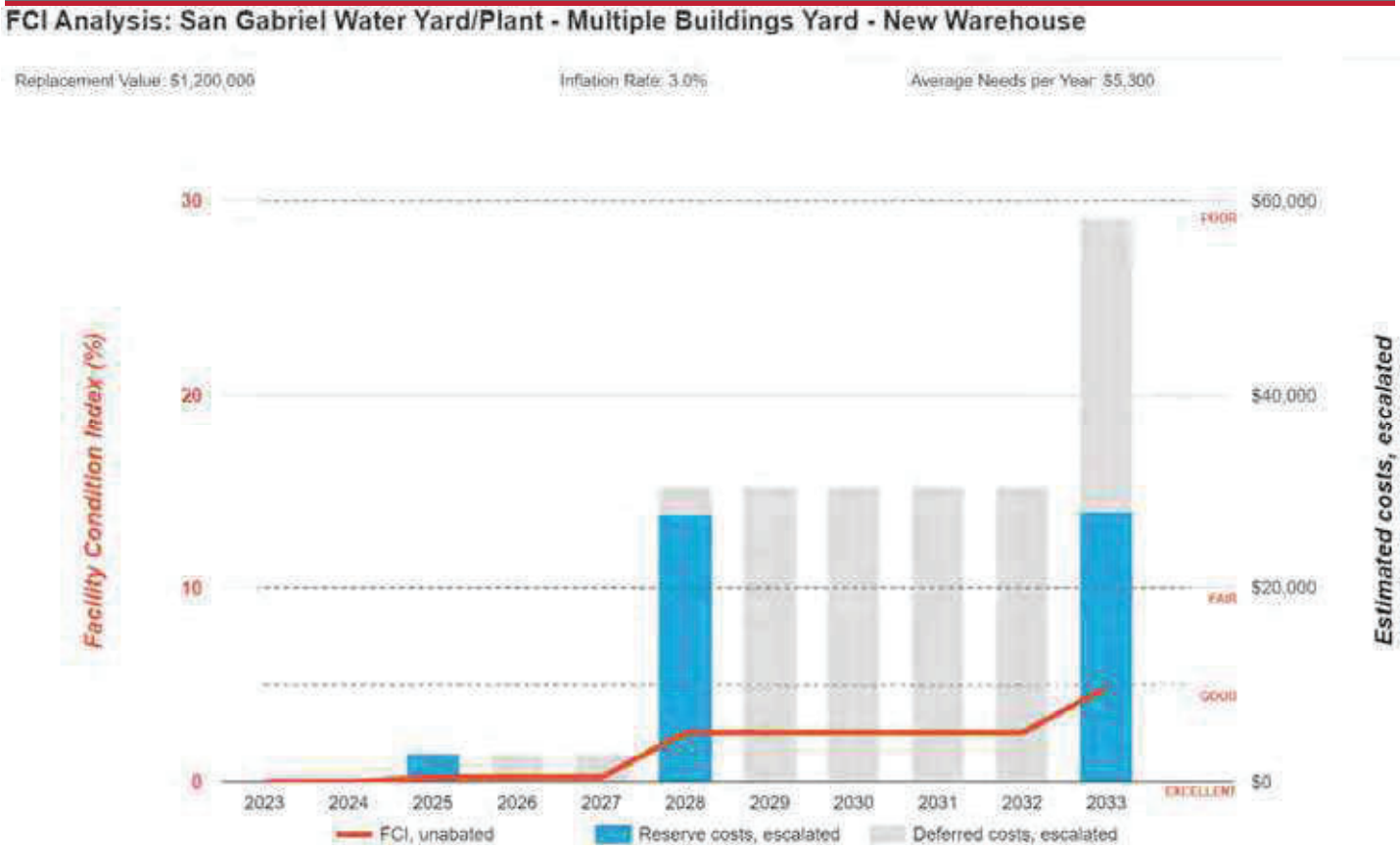
Yard – New Warehouse: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Facade	-	-	$7,800	-	$109,000	$116,800
Roofing	-	-	-	-	-	-
Interiors	-	-	$7,900	-	$10,700	$18,600
Plumbing	-	-	$900	-	$7,800	$8,600
HVAC	-	-	-	$14,400	$10,800	$25,200
Electrical	-	-	-	$13,400	$8,100	$21,500
Fire Alarm & Electronic Systems	-	-	$11,000	-	$17,200	$28,200
Site Utilities	-	$2,800	-	-	-	$2,800
TOTALS (3% inflation)	**-**	**$2,800**	**$27,600**	**$27,800**	**$163,500**	**$221,700**

*Totals have been rounded to the nearest $100.

The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



7. Yard – Storage Building

Yard – Storage Building: Systems Summary

Address	625 West Hidden Valley Drive; Glendora, California	
Constructed/Renovated	1920	
Building Size	1,200 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Masonry bearing walls and wood framed roof	Poor
Façade	Exposed CMU	Fair
Roof	Flat construction with single-ply EPDM membrane	Poor
Interiors	Walls: Unfinished Floors: Unfinished Ceilings: Unfinished	--
Elevators	None	--
Plumbing	None	--
HVAC	Roof mounted exhaust fans	Fair
Fire Suppression	Fire extinguishers only	Fair

Yard – Storage Building: Systems Summary

Electrical	Source & Distribution: Main switchboard with copper wiring Interior Lighting: T-8 Emergency: none	Fair
Fire Alarm	None	--
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	Roof leaks, roof frame wood rotting, interior concrete floor cracking	

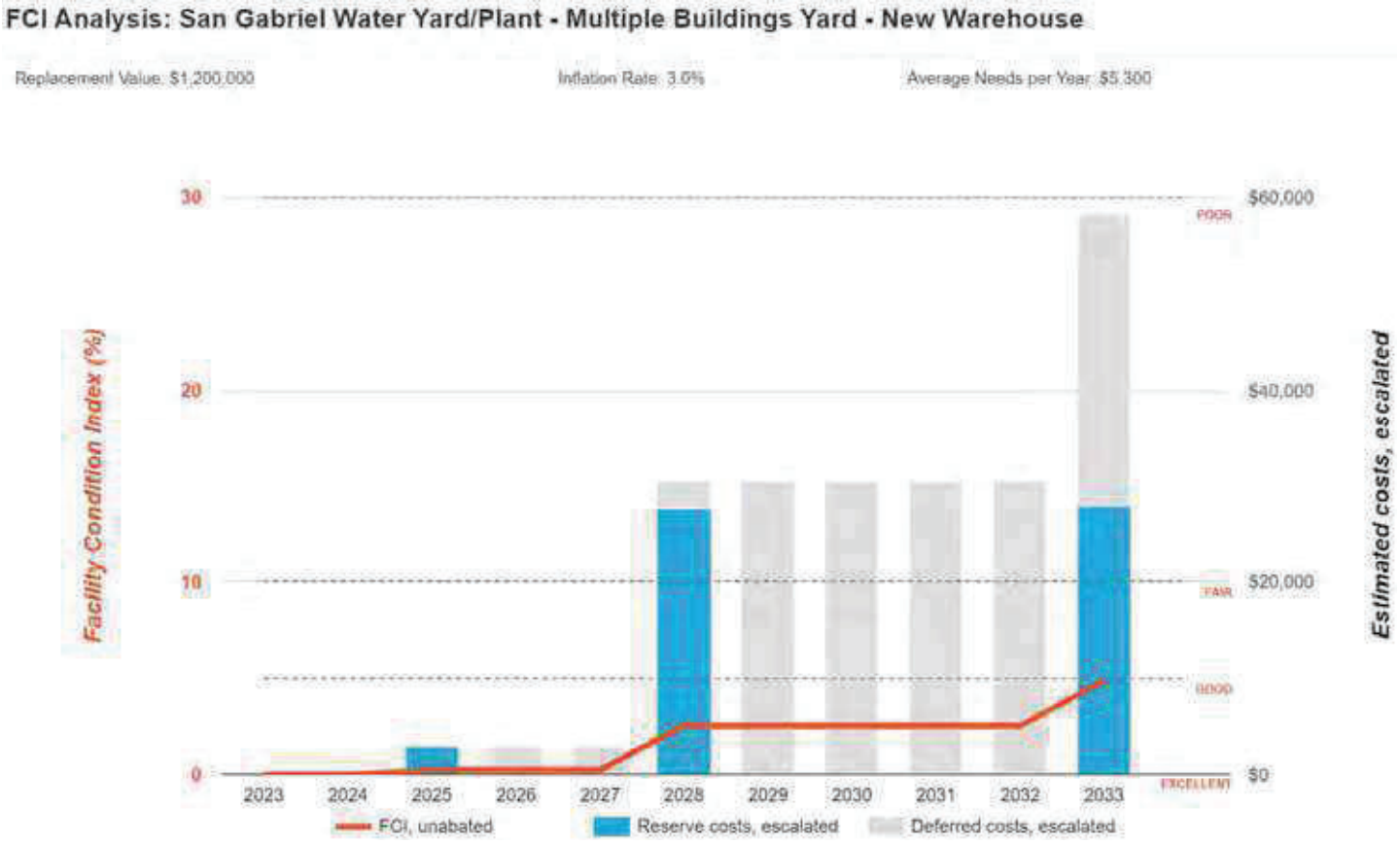
Yard – Storage Building: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$26,800	$16,500	-	-	-	$43,300
Facade	-	-	-	-	$16,400	$16,400
Roofing	-	$20,200	-	-	-	$20,200
Electrical	-	-	-	$5,000	$92,200	$97,200
Site Utilities	-	-	-	$6,000	-	$6,000
TOTALS (3% inflation)	**$26,800**	**$36,800**	**-**	**$11,000**	**$108,700**	**$183,300**

*Totals have been rounded to the nearest $100.

The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



8. Site Summary

Site Information

Lot Size	1.30 acres (estimated)	
Parking Spaces	None	
System	*Description*	*Condition*
Pavement/Flatwork	Asphalt lots with areas of concrete	Good
Site Development	CMU wall and chain link fencing	Fair
Landscaping and Topography	Limited landscaping features Irrigation not present Low to moderate site slopes throughout	Fair
Utilities	Municipal water and sewer Local utility-provided electric	Good
Site Lighting	Pole-mounted: LED Building-mounted: metal halide	Fair
Ancillary Structures	Concrete reservoir structure, chain link cage for Well #5E	Good
Accessibility	Presently it does not appear an accessibility study is needed for the exterior site areas. See Appendix C.	
Key Issues and Findings	Mature tree overgrowth	

Site: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	-	-	-	-	-	-
Electrical	-	-	-	-	$72,100	$72,100
Fire Alarm & Electronic Systems	-	-	$46,000	$17,000	$61,900	$124,900
Site Development	$2,200	-	-	-	$979,100	$981,300
Site Utilities	-	-	-	$24,000	-	$24,000
Site Pavement	-	-	$21,100	$24,500	$316,900	$362,400
TOTALS (3% inflation)	**$2,200**	**-**	**$67,100**	**$65,400**	**$1,429,900**	**$1,564,600**

*Totals have been rounded to the nearest $100.

9. Property Space Use and Observed Areas

Areas Observed

The interior spaces were observed in order to gain a clear understanding of the property's overall condition. Other areas accessed included the site within the property boundaries and the exterior of the property.

Key Spaces Not Observed

All key areas of the property were accessible and observed.

10. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" and "public facilities" on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities.
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the checklists that are included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this particular assessment. A full measured ADA survey would be required to identify any and all specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are not included in the dataset
- For any "none" boxes checked or reference to "no issues" identified, that alone does not guarantee full compliance

The facility was originally constructed in 1920. The facility was substantially renovated in 2013 but no widespread accessibility improvements appear to have been implemented at that time.

During the interview process with the client representatives, no complaints or pending litigation associated with potential accessibility issues was reported.

No costs or detailed follow-up study are currently recommended since this facility is not accessible to the general public, and all workers presently employed at the facility are required to possess a degree of physical ability that makes full compliance infeasible and currently unnecessary. Accessibility accommodation will reportedly be made when and if specific needs arise. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

11. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed, or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

12. Opinions of Probable Costs

Cost estimates are attached throughout this report, with the Replacement Reserves in the appendix.

These estimates are based on Invoice or Bid Document/s provided either by the Owner/facility and construction costs developed by construction resources such as *R.S. Means, CBRE Whitestone,* and *Marshall & Swift,* Bureau Veritas's experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system's or component's respective replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

Exceedingly Aged

A fairly common scenario encountered during the assessment process, and a frequent source of debate, occurs when classifying and describing "very old" systems or components that are still functioning adequately and do not appear nor were reported to be in any way deficient. To help provide some additional intelligence on these items, such components will be tagged in the database as Exceedingly Aged. This designation will be reserved for mechanical or electrical systems or components that have aged well beyond their industry standard lifecycles, typically at least 15 years beyond and/or twice their Estimated Useful Life (EUL). In tandem with this designation, these items will be assigned a Remaining Useful Life (RUL) not less than two years but not greater than 1/3 of their standard EUL. As such the recommended replacement time for these components will reside outside the typical Short Term window but will not be pushed 'irresponsibly' (too far) into the future.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

13. Energy Audit

The purpose of this Energy Audit is to provide San Gabriel Water Yard/Plant with a baseline of energy usage, the relative energy efficiency of the facility, and specific recommendations for Energy Conservation Measures. Information obtained from these analyses may be used to support a future application to an Energy Conservation Program, Federal and Utility grants towards energy conservation, as well as support performance contracting, justify a municipal bond-funded improvement program, or as a basis for replacement of equipment or systems

The energy audit consisted of an onsite visual assessment to determine current conditions, itemize the energy consuming equipment (i.e. Boilers, Make-Up Air Units, DWH equipment); review lighting systems both exterior and interior; and review efficiency of all such equipment. The study also included interviews and consultation with operational and maintenance personnel. The following is a summary of the tasks and reporting that make up the Energy Audit portion of the report.

The following is a summary of the tasks and reporting that make up the Energy Audit portion of the report.

Energy and Water Using Equipment

- Bureau Veritas has surveyed the common areas, offices, maintenance facilities and mechanical rooms to document utility-related equipment, including heating systems, cooling systems, air handling systems and lighting systems.

Building Envelope

- Bureau Veritas has reviewed the characteristics and conditions of the building envelope, checking insulation values and conditions. This review also includes an inspection of the condition of walls, windows, doors, roof areas, insulation and special use areas. Where we anticipated significant losses, we utilized infrared thermographs to analyze heat loss across the envelope.

Recommendations for Energy Savings Opportunities

- Based on the information gathered during the on-site assessment, the utility rates, as well as recent consumption data and engineering analysis, Bureau Veritas has identified opportunities to save energy and provide probable construction costs, projected energy/utility savings and provide a simple payback analysis.

Analysis of Energy Consumption

- Based on the information gathered during the on-site assessment and a, Bureau Veritas has conducted an analysis of the energy usage of all equipment, and identified which equipment is using the most energy and what equipment upgrades may be necessary. As a result, equipment upgrades, or replacements are identified that may provide a reasonable return on the investment and improve maintenance reliability.

Energy Audit Process

- Interviewing staff and review plans and past upgrades
- Performing an energy audit for each use type
- Performing a preliminary evaluation of the utility system
- Analyzing findings, utilizing ECM cost-benefit worksheets
- Making preliminary recommendations for system energy improvements and measures
- Estimating initial cost and changes in operating and maintenance costs based on implementation of energy efficiency measures
- Ranking recommended cost measures, based on the criticality of the project and the largest payback

14. Historical Energy and Water Performance Metrics

Utility Data Tabulation Methodology

The baseline utility consumption data for the proper has been developed by aggregating the consumption from one electric meter and one water meter.

Data Limitation:
No assumptions were made in tabulation of the utility data for the purposes of the audit.

The cost associated with the utility consumption at the building was not made available to Bureau Veritas at the time of report compilation. As a result, Bureau Veritas has modeled the approximate rate based on the utility company published tariff for commercial institutions. Bureau Veritas will update the report on receipt of the actual data from the client.

Utilities Metering at Glance	
Number of electric meters observed	One
Number of domestic water meter observed	One

Average Utility Rates		
Electricity	Natural Gas	Water & Sewer
$0.30/kWh	$2.24/therm	$8.36/CCF

Electricity

Note: No utility data was received by Bureau Veritas from the housing authority at the time of report compilation. As a result, Bureau Veritas has used the electric rate from other properties within the same geographical region having similar construction layout and usage patterns. Bureau Veritas will update the report on receipt of the actual data from the housing authority.

Water and Sewer

The City of Glendora satisfies the water and sewer requirements of the facility.

Note: No water and sewer utility data was received by Bureau Veritas from the client at the time of report compilation. As a result, Bureau Veritas has used a rate from other properties within the same geographical region having similar construction layout and usage patterns. Bureau Veritas will update the report on receipt of the actual data.

End Use Energy Distribution

Note: No utility data was received by Bureau Veritas from the client at the time of report compilation. As a result, Bureau Veritas will complete end use energy distribution on receipt of the actual data from the client.

Energy Star Portfolio Manager Facility Summary

Bureau Veritas uses the Portfolio Manager tool developed by the Federal Environmental Protection Agency to track relative energy uses of buildings by property type. This tool allows the input of a facility's historic utility data to be compared with normalized data of a large database of its peer facilities.

Note: No utility data was received by Bureau Veritas from the client at the time of report compilation. As a result, Bureau Veritas will complete energy benchmarking on receipt of the actual data from the client.

15. Energy Conservation Measures

Bureau Veritas has conducted an Energy Audit on San Gabriel Water Yard/Plant. The study included a review of the building's construction features, historical energy and water consumption and costs, review of the building envelope, HVAC equipment, heat distribution systems, lighting, and the building's operational and maintenance practices.

Bureau Veritas has evaluated one Energy Conservation Measures (ECMs) for this property. The savings for each measure are calculated using standard engineering methods followed in the industry, and detailed calculations for ECM are provided in Appendix H for reference. A 10% discount in energy savings was applied to account for the interactive effects amongst the ECMs. In addition to the consideration of the interactive effects, Bureau Veritas has applied a 15% contingency to the implementation costs to account for potential cost overruns during the implementation of the ECMs.

The following table summarizes the recommended ECMs in terms of description, investment cost, energy consumption reduction, and cost savings.

Recommended Non-Renewable Energy Conservation Measures: Financial Impact	
Total Projected Initial ECM Investment	$5,994 *(In Current Dollars)*
Estimated Annual Cost Savings Related to ECMs	$1,943 *(In Current Dollars)*
Net Effective ECM Payback	3.09 years

Key Metrics to Benchmark the Subject Property's Energy Usage Profile

- Building Site Energy Use Intensity - The sum of the total site energy use in thousands of Btu per unit of gross building area. Site energy accounts for all energy consumed at the building location only not the energy consumed during generation and transmission of the energy to the site.
- Building Source Energy Use Intensity – The sum of the total source energy use in thousands of Btu per unit of gross building area. Source energy is the energy consumed during generation and transmission in supplying the energy to your site.
- Building Cost Intensity - This metric is the sum of all energy use costs in dollars per unit of gross building area.
- Greenhouse Gas Emissions - Although there are numerous gases that are classified as contributors to the total for Greenhouse Emissions, the scope of this energy audit focuses on carbon dioxide (CO_2). Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement).

Energy Conservation Measures Screening:

Bureau Veritas screens ECMs using two financial methodologies. ECMs which are considered financially viable must meet both criteria.

1. Simple Payback Period –The number of years required for the cumulative value of energy or water cost savings less future non-fuel or non-water costs to equal the investment costs of the building energy or water system, without consideration of discount rates. ECMs with a payback period greater than the Expected Useful Life (EUL) of the project are not typically recommended, as the cost of the project will not be recovered during the lifespan of the equipment. These ECMs are recommended for implementation during future system replacement. At that time, replacement may be evaluated based on the premium cost of installing energy efficient equipment.

$$Simple\ Payback = \frac{Initial\ Cost}{Annual\ Savings}$$

2. Savings-to-Investment Ratio (SIR) – The savings-to-investment ratio is the ratio of the present value savings to the present value costs of an energy or water conservation measure. The numerator of the ratio is the present value over the estimated useful life (EUL) of net savings in energy or water and non-fuel or non-water operation and maintenance costs attributable to the proposed energy or water conservation measure. The denominator of the ratio is the present value of the net increase in investment and replacement costs less salvage value attributable to the proposed energy or water conservation measure. It is recommended that energy efficiency recommendations should be based on a calculated SIR, with larger SIRs receiving a higher priority. A project is typically only recommended if SIR is greater than or equal to 1.0, unless other factors outweigh the financial benefit.

$$SIR = \frac{Present\ Value\ (Annual\ Savings, i\%, EUL)}{Initial\ Cost}$$

Bureau Veritas has identified one Energy Conservation Measures (ECMs) for this property.

List of Recommended Energy Conservation Measures For SAN GABRIEL WATER YARD/PLANT

		Description of ECM	Location	Labor Cost	Material Cost	Projected Initial Investment	Utility Company Incentive	Net Projected Initial Investment	Estimated Annual Energy & Water Savings			Total Energy Savings	Total Green House Gas Savings	Estimated Utility Cost Savings	Estimated Annual O&M Savings	Total Estimated Annual Cost Savings	Simple Payback	S.I.R.	Life Cycle Savings	Expected Useful Life (EUL)
									Electricity	Demand Reduction	Water									
				($)	($)	($)	($)	($)	(kWh)	(kW)	(kGal)	(MMBtu)	(MtCO2e/Yr)	($)	($)	($)	(Yrs.)		($)	(Yrs.)
1	Title	Upgrade Building Lighting to LED and Install Automatic Lighting Controls																		
	Attribute	Replace HID (Ex) Linear Fluorescent (Mix)	Location: Building Interior and Exterior - San Gabriel Water Yard/Plant - Multiple Buildings	$2,327	$2,885	$5,212	$0	$5,212	8,733	0	0	33	1.51	$2,099	$140	$2,139	2.41	4.64	$20,565	15.00
		Totals for BuiLow Cost Items		$0	$0	$0	$0	$0	0	0	0	0	0.00	$0	$0	$0	0.00			
		Totals For Capital Items		$2,327	$2,885	$5,212	$0	$5,212	8,733	0	0	33	1.51	$2,099	$140	$2,139	2.41			
		Interactive Savings Discount @ 15%							-872	-0	-1	-3	-0.15	-$201	-$15	-$216				
		Total Contingency Expense @ 15%				$783		$783												
Total for Improvements						$5,994	$0	$5,994	9,605	0	0	36	1.36	$1,898	$124	$1,942	2.66			

16. Operations & Maintenance Plan

The quality of the maintenance and the operation of the facility's energy systems have a direct effect on its overall energy efficiency. Energy-efficiency needs to be a consideration when implementing facility modifications, equipment replacements, and general corrective actions. The following is a list of activities that should be performed as part of the routine maintenance program for the property.

Building Envelope

- ✓ Ensure that the building envelope has proper caulking and weather stripping.
- ✓ Patch holes in the building envelope with foam insulation and fire rated caulk around combustion vents
- ✓ Inspect building vents semiannually for bird infestation
- ✓ Inspect windows monthly for damaged panes and failed thermal seals
- ✗ Repair and adjust automatic door closing mechanisms as needed.

Heating and Cooling

- ✗ Pilots lights on furnaces and boilers be turned off in summer
- ✗ All preventive maintenance should be performed on all furnaces and boilers, which would include cleaning of burners and heat exchanger tubes.
- ✗ Ensure that the combustion vents exhaust outside the conditioned space and the vent dampers are functional
- ✗ Ensure that the control valves are functioning properly before start of every season
- ✗ Ensure steam traps are functional before start of each heating season
- ✗ Ensure use of chemical treatment for boiler make up water
- ✗ Ensure boiler outside temperature re-set is set to 55F
- ✗ Ensure use of chemical treatment for Colling tower water to prevent corrosion
- ✗ Ensure the duct work in unconditioned space is un-compromised and well insulated
- ✗ Duct cleaning is recommended every 10 years. This should include sealing of ducts using products similar to 'aeroseal'
- ✗ Ensure use of economizer mode is functional and used
- ✗ Ensure that the outside air dampers actuators are operating correctly
- ✗ Ensure air coils in the AHU and FCA's are pressure washed annually
- ✗ Return vents should remain un-obstructed and be located centrally
- ✓ Temperature settings reduced in unoccupied areas and set points seasonally adjusted.
- ✓ Evaporator coils and condenser coils should be regularly cleaned to improve heat transfer
- ✓ Refrigerant pipes should be insulated with a minimum of ¾" thick Elastomeric Rubber Pipe Insulation
- ✓ Ensure refrigerant pressure is maintained in the condensers
- ✓ Change air filters on return vents seasonally. Use only filters with 'Minimum Efficiency Rating Value'(MERV) of 8

Central Domestic Hot Water Heater

- ✗ Never place gas fired water heaters adjacent to return vents so as to prevent flame roll outs
- ✓ Ensure the circulation system is on timer to reduce the losses through re-circulation
- ✓ Ensure all hot water pipes are insulated with fiberglass insulation at all times
- ✓ Replacement water heater should have Energy Factor (EF)>0.9
- ✗ Tank-type water heaters flushed annually

Lighting Improvements

- ✓ Utilize bi-level lighting controls in stairwells and hallways.
- ✓ Use LED replacement lamps
- ✓ Clean lighting fixture reflective surfaces and translucent covers.
- ✓ Ensure that timers and/or photocells are operating correctly on exterior lighting
- ✓ Use occupancy sensors for offices and other rooms with infrequent occupancy

Existing Equipment and Replacements

- ✓ Ensure that refrigerator and freezer doors close and seal correctly
- ✓ Ensure kitchen and bathroom exhaust outside the building and the internal damper operates properly
- ✓ Ensure that bathroom vents exhaust out
- ✓ Office/ computer equipment either in the “sleep” or “off” mode when not used

Key

x	Maintenance Measure is Not Applicable For the Given Facility
✓	Maintenance Measure is Applicable For the Given Facility

17. Certification

The City of Glendora (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of San Gabriel Water Yard/Plant, 625 West Hidden Valley Drive, Glendora, California 91702, the "Property". It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

Prepared by: Carl Alejandro,
Project Manager

Reviewed by: Usama Anwar

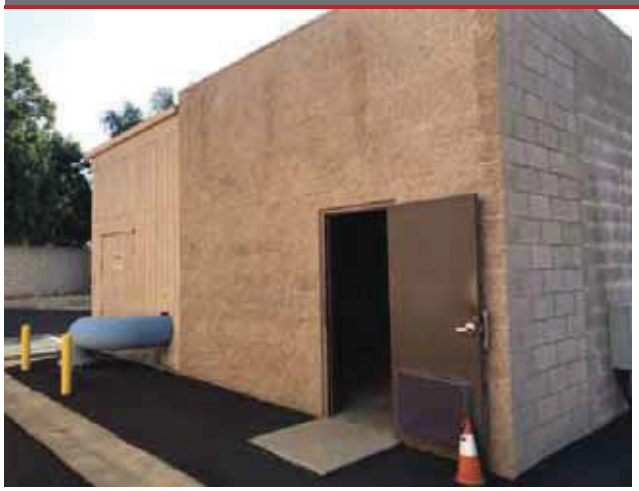
Usama Anwar,
Technical Report Reviewer for
Mary Venable,
Program Manager
mary.venable@bureauveritas.com
800.733.0660 x 7292719

18. Appendices

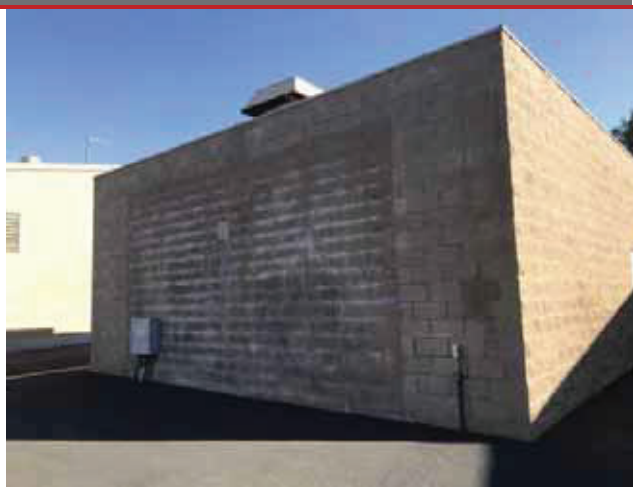
Appendix A: Photographic Record
Appendix B: Site Plans
Appendix C: Pre-Survey Questionnaire
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Energy Conservation Measures Calculations
Appendix I: Lighting System Schedule
Appendix J: Energy Audit Glossary of Terms

Appendix A:
Photographic Record

Photographic Overview



1 - WELL BUILDING NO.12E FRONT ELEVATION



2 - WELL BUILDING NO. 12E SIDE ELEVATION

3 - WELL SHED NO.8E FRONT ELEVATION

4 - WELL SHED NO.9E FRONT ELEVATION

5 - NEW BOOSTER BUILDING FRONT ELEVATION

6 - NEW BOOSTER BUILDING SIDE ELEVATION

Photographic Overview

7 - NEW WAREHOUSE FRONT ELEVATION

8 - NEW WAREHOUSE SIDE ELEVATION

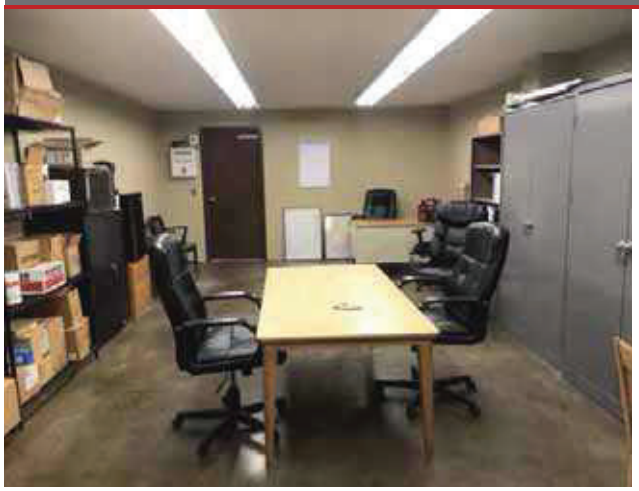
9 - STORAGE BUILDING FRONT ELEVATION

10 - STORAGE BUILDING SIDE ELEVATION

11 - WELL NO.5E FRONT ELEVATION

12 - WELL NO.5E SIDE ELEVATION

Photographic Overview



13 - BREAK ROOM AND OFFICE

14 - NEW WAREHOUSE INTERIOR AREA

15 - TYPICAL STAFF RESTROOM INTERIOR

16 - WELL BUILDING NO.12E INTERIOR

17 - CHLORINE EQUIPMENT INTERIOR AREA

18 - NEW BOOSTER BUILDING INTERIOR

Photographic Overview

19 - STORAGE BUILDING INTERIOR AREA

20 - INSTANT HOT WATER HEATER

21 - DUCTLESS SPLIT SYSTEM AIR CONDITIONER

22 - ROOF MOUNTED EXHAUST FAN

23 - MAIN BUILDING ELECTRICAL SWITCHBOARD

24 - BUILDING MOTOR CONTROL CENTER

Photographic Overview

25 - SITE DIESEL EMERGENCY GENERATOR

26 - WATER RESERVOIR CONCRETE STRUCTURE

27 - ASPHALT PAVED PARKING LOT

28 - CMU WALL SITE FENCING

29 - AUTOMATIC GATE WITH CONTROLLER

30 - SITE AREA POLE LIGHT

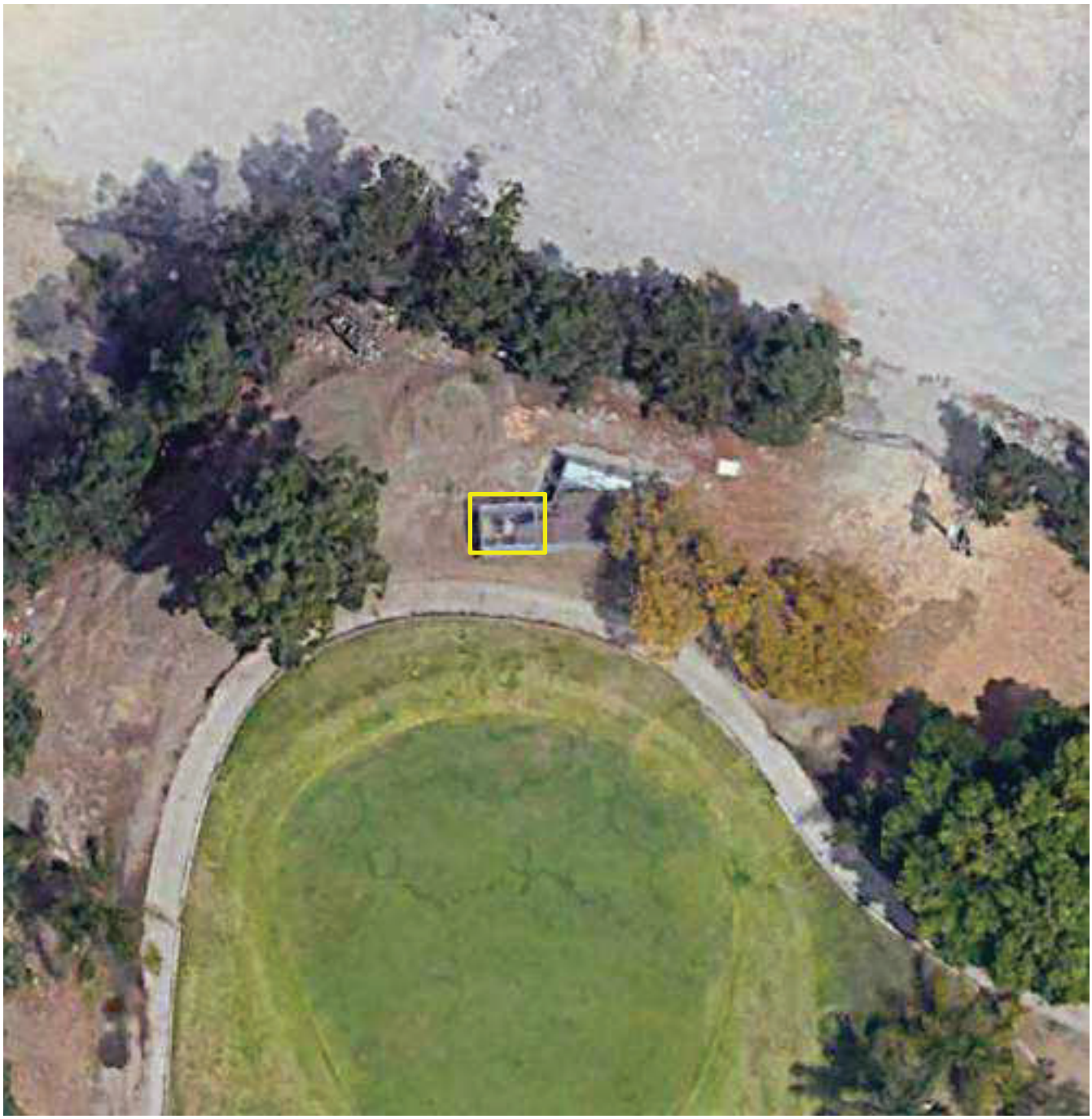
Appendix B:
Site Plans

Site Plan

Project Number	Project Name
158691.23R000-001.379	San Gabriel Water Yard/Plant
Source	**On-Site Date**
Google	December 12, 2023

N

Site Plan



Project Number	Project Name
158691.23R000-001.379	San Gabriel Water Yard/Plant
Source	**On-Site Date**
Google	December 12, 2023

N

Appendix C:
Pre-Survey Questionnaire

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name:	San Gabriel Water Yard/Plant - Multiple Buildings
Name of person completing form:	Ron Nichka
Title / Association w/ property:	Water Production Supervisor
Length of time associated w/ property:	24 years
Date Completed:	12/12/2023
Phone Number:	626.852.4838
Method of Completion:	INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed	Renovated	
2	Building size in SF	**SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).	Well 5 had a break in. A cage was installed. Chlorine Building has new chlorine pumps. Next to booster building.		
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?	Add more security cameras		
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.	Security.		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?	X				Well 12 E roof leaks. Chlorine room.
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?	X				Well 12 E and old storage building has wood rot.
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?	X				Generator is undersized. Could only run half of the plant.
15	Are there any problems or inadequacies with exterior lighting?	X				Building exterior lights were burnt out. No lighting near generator
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?				X	
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.				X	
20	ADA: Has building management reported any accessibility-based complaints or litigation?				X	
21	Are any areas of the property leased to outside occupants?				X	

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Checklist - 2010 ADA Standards for Accessible Design

Property Name: San Gabriel Water Yard/Plant - Multiple

BV Project Number: 158691.23R000-001.379

Abbreviated Accessibility Checklist					
Facility History & Interview					
	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?			X	Facility is not accessible to public.
2	Have any ADA improvements been made to the property since original construction? Describe.			X	
3	Has building management reported any accessibility-based complaints or litigation?			X	

Appendix E:
Component Condition Report

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Building #12E

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
B1010	Structure	Poor	Structural Framing, Wood, Conventional Stud, Conventional Stud	200 SF	1	7164596
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Wood Siding	450 SF	15	7164592
B2010	Building Exterior	Poor	Exterior Walls, Concrete Block (CMU)	100 SF	2	7164600
B2050	Building Exterior	Fair	Exterior Door, Steel, Standard	2	20	7164597
Roofing						
B3010	Roof	Poor	Roofing, Single-Ply Membrane, EPDM	850 SF	1	7164598
HVAC						
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper	1	8	7164590
Electrical						
D5020	Throughout building	Fair	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity	850 SF	20	7164591
D5020	Interior	Fair	Motor Control Center, w/ Main Breaker	1	8	7164595
D5040	Throughout building	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	850 SF	10	7164594
Sitework						
G4050	Building exterior	Fair	Exterior Fixture w/ Lamp, any type, w/ LED Replacement	1	10	7164601

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Site

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
B1010	Site	Good	Building Structure	6,400 SF	67	7187094
Electrical						
D5020	Well	Fair	Switchboard, 277/480 V	1	11	7164674
Fire Alarm & Electronic Systems						
D7010	Site	Fair	Vehicular Access Devices, Gate w/ Controller	1	8	7164686
D7030	Site	NA	Security Camera, Closed Circuit Exterior, Fixed Color	8	3	7187093
Pedestrian Plazas & Walkways						
G2020	Site	Good	Parking Lots, Pavement, Asphalt, Seal & Stripe	28,000 SF	4	7164677
G2020	Site	Good	Parking Lots, Pavement, Asphalt, Mill & Overlay	28,000 SF	19	7164682
Sitework						
G2060	Site	Fair	Fences & Gates, Vehicle Gate, Metal Manual	1	13	7164690
G2060	Well	Excellent	Fences & Gates, Fence, Chain Link 8'	60 LF	40	7164673
G2060	Site	Fair	Fences & Gates, Fence, Chain Link 8'	3,000 LF	20	7164689
G2060	Site	Fair	Retaining Wall, Concrete Masonry Unit (CMU)	4,800 SF	20	7164685
G2080	Site	Poor	Landscaping, Mature Trees, Removal/Trimming, Repair	1	0	7164647

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Site

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
G4050	Site	Fair	Pole Light Fixture w/ Lamps, any type 20' High, w/ LED Replacement, Replace/Install	3	10	7164681

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
B1010	Chlorine Room	Poor	Structural Flooring/Decking, Concrete, Repair	350 SF	0	7164635
Facade						
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, Prep & Paint	4,500 SF	5	7164639
B2020	Building Exterior	Good	Window, Steel, 16-25 SF	9	20	7164628
B2050	Building Exterior	Good	Overhead/Dock Door, Steel, 12'x12' (144 SF)	1	20	7164631
B2050	Building Exterior	Good	Overhead/Dock Door, Steel, 20'x20' (400 SF)	2	20	7164624
B2050	Building Exterior	Good	Exterior Door, Steel, Standard	3	30	7164623
Roofing						
B3010	Roof	Good	Roofing, Metal	4,764 SF	30	7164620
B3060	Roof	Good	Roof Skylight, per unit, up to 20 SF	18	20	7164638
Plumbing						
D2010	Building exterior	Good	Backflow Preventer, Domestic Water	1	20	7164633
D2010	Building exterior	Good	Backflow Preventer, Domestic Water	1	20	7164632
HVAC						
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164646
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164629
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164637
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164636
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164617
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164618
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164643
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164640
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 10" Damper	1	10	7164627
Electrical						
D5010	Building exterior	Fair	Automatic Transfer Switch, ATS	1	15	7164619
D5010	Building exterior	NA	Generator, Diesel, 760 to 1000 KW	1	5	7187092
D5010	Building exterior	Good	Generator, Diesel	1	19	7164641
D5020	Building exterior	Good	Switchgear, 277/480 V	1	30	7164630
D5020	Booster Room	Good	Motor Control Center, w/ Main Breaker	1	20	7164642
D5020	Booster Room	Good	Switchboard, 277/480 V	1	30	7164634
D5020	Booster Room	Good	Motor Control Center, w/ Main Breaker	1	20	7164626

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D5020	Throughout building	Good	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity	4,764 SF	30	7164644
D5040	Throughout building	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	4,764 SF	10	7164616
Fire Alarm & Electronic Systems						
D7030	Throughout building	Fair	Security/Surveillance System, Full System Upgrade, Average Density	4,764 SF	8	7164645
Sitework						
G4050	Building exterior	Fair	Exterior Fixture w/ Lamp, any type, w/ LED Replacement	4	10	7164621

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Storage Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
B1010	Storage Building (Old Booster Building)	Poor	Structural Flooring/Decking, Concrete, Repair	600 SF	0	7164692
B1010	Storage Building (Old Booster Building)	Poor	Structural Framing, Wood, Conventional Stud, Conventional Stud	600 SF	1	7164684
Facade						
B2050	Storage Building (Old Booster Building)	Fair	Exterior Door, Steel, Standard	1	20	7164688
B2050	Storage Building (Old Booster Building)	Fair	Overhead/Dock Door, Steel, 12'x12' (144 SF)	2	15	7164687
Roofing						
B3010	Storage Building (Old Booster Building)	Poor	Roofing, Single-Ply Membrane, EPDM	1,200 SF	1	7164691
Electrical						
D5020	Storage Building (Old Booster Building)	Fair	Motor Control Center, w/ Main Breaker	1	15	7164679
D5020	Throughout	Fair	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity	1,200 SF	20	7187085
D5020	Storage Building (Old Booster Building)	Fair	Secondary Transformer, Dry, Stepdown	1	15	7164678
D5040	Throughout	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	1,200 SF	10	7187084
Sitework						
G4050	Storage Building (Old Booster Building)	Fair	Exterior Fixture w/ Lamp, any type, w/ LED Replacement	5	10	7164680

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #8E

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Facade						
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, Prep & Paint	330 SF	5	7164604
B2050	Building Exterior	Fair	Exterior Door, Steel, Standard	1	20	7164608
Roofing						
B3010	Roof	Fair	Roofing, Metal	70 SF	20	7164602
HVAC						
D3060	Roof	Fair	Exhaust Fan, Centrifugal, 16" Damper	1	13	7164607
Electrical						
D5020	Throughout building	Fair	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity	70 SF	20	7164603

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #8E

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D5040	Throughout building	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	70 SF	10	7164606

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #9E

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Facade						
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, Prep & Paint	330 SF	5	7164613
B2050	Building Exterior	Fair	Exterior Door, Steel, Standard	1	20	7164609
Roofing						
B3010	Roof	Fair	Roofing, Metal	70 SF	20	7164615
HVAC						
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	10	7164610
Electrical						
D5020	Throughout building	Fair	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity	70 SF	20	7164611
D5040	Throughout building	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	70 SF	10	7164612

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Warehouse

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Facade						
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, Prep & Paint	1,500 SF	5	7164669
B2010	Building Exterior	Good	Exterior Walls, Metal Siding	1,500 SF	30	7164660
B2020	Building Exterior	Good	Window, Steel, 16-25 SF	11	20	7164652
B2050	Building Exterior	Good	Overhead/Dock Door, Steel, 20'x20' (400 SF)	2	20	7164664
B2050	Building Exterior	Good	Exterior Door, Steel, Standard	1	30	7164653
Roofing						
B3010	Roof	Good	Roofing, Metal	3,200 SF	30	7164667
Interiors						
C1030	Throughout building	Good	Interior Door, Steel, Standard	2	30	7164668
C2010	Throughout building	Fair	Wall Finishes, any surface, Prep & Paint	1,200 SF	5	7164650
C2030	Office	Fair	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	800 SF	5	7164651
C2050	Throughout building	Fair	Ceiling Finishes, any flat surface, Prep & Paint	800 SF	5	7164654
Plumbing						
D2010	Restrooms	Fair	Water Heater, Electric, Instant Hot	1	5	7164659
D2010	Restrooms	Good	Sink/Lavatory, Wall-Hung, Enameled Steel	1	20	7164658
D2010	Restrooms	Good	Toilet, Residential Water Closet	1	20	7164649
D2010	Restroom	Good	Plumbing System, Supply & Sanitary, Very Low Density (excludes fixtures)	100 SF	30	7187559
HVAC						

Component Condition Report | San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Warehouse

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D3030	Building exterior	Good	Split System Ductless, Single Zone	1	14	7164656
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	10	7164665
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	10	7164661
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	10	7164671
Electrical						
D5020	Throughout building	Good	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity	3,200 SF	30	7164655
D5020	Office	Good	Distribution Panel, 277/480 V	1	20	7164662
D5040	Throughout building	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	3,200 SF	10	7164670
Fire Alarm & Electronic Systems						
D7030		Fair	Security/Surveillance System, Full System Upgrade, Average Density	3,200 SF	5	7164663
Sitework						
G4050	Building exterior	Poor	Exterior Fixture w/ Lamp, any type, w/ LED Replacement	3	2	7164648

Appendix F:
Replacement Reserves

Replacement Reserves Report

2/16/2024

Location	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total Escalated Estimate
San Gabriel Water Yard/Plant - Multiple Buildings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Building #12E	$0	$19,844	$3,157	$0	$0	$0	$0	$0	$30,907	$0	$4,768	$0	$0	$0	$0	$10,430	$0	$0	$0	$0	$32,915	**$102,021**
San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #8E	$0	$0	$0	$0	$0	$1,707	$0	$0	$0	$0	$294	$0	$0	$5,243	$0	$2,295	$0	$0	$0	$0	$6,502	**$16,042**
San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #9E	$0	$0	$0	$0	$0	$1,707	$0	$0	$0	$0	$5,092	$0	$0	$0	$0	$2,295	$0	$0	$0	$0	$6,502	**$15,597**
San Gabriel Water Yard/Plant - Multiple Buildings / Site	$2,232	$0	$0	$46,038	$21,098	$0	$0	$0	$16,961	$24,458	$23,992	$72,076	$0	$65,586	$28,354	$0	$0	$0	$0	$288,521	$975,363	**$1,564,679**
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Drained Vault	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Manifold	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters	$15,621	$0	$0	$0	$0	$506,185	$0	$0	$17,956	$0	$46,394	$0	$0	$0	$0	$59,104	$0	$0	$0	$730,433	$415,940	**$1,791,633**
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Pump Nos. 1-5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Warehouse	$0	$0	$2,841	$0	$0	$27,594	$0	$0	$0	$0	$27,831	$0	$0	$0	$10,801	$21,092	$0	$0	$0	$0	$131,661	**$221,820**
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Storage Building	$26,779	$36,776	$0	$0	$0	$0	$0	$0	$0	$0	$11,036	$0	$0	$0	$0	$65,130	$0	$0	$0	$0	$43,529	**$183,249**
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Surge Tank Flow Meter Vault	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Well #5E	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Well 12 Flow Meter Vault	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Grand Total	**$44,631**	**$56,620**	**$5,998**	**$46,038**	**$21,098**	**$537,195**	**$0**	**$0**	**$65,824**	**$24,458**	**$119,408**	**$72,076**	**$0**	**$70,829**	**$39,155**	**$160,345**	**$0**	**$0**	**$0**	**$1,018,955**	**$1,612,413**	**$3,895,041**

San Gabriel Water Yard/Plant - Multiple Buildings

San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Building #12E

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup	*Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
B1010	Structure	7164596	Structural Framing, Wood, Conventional Stud, Conventional Stud	75	74	1	200	SF	$18.00	$26.78	$5,356		$5,356																				**$5,356**
B2010	Building Exterior	7164592	Exterior Walls, Wood Siding, Replace	30	15	15	450	SF	$10.00	$14.88	$6,695																$6,695						**$6,695**
B2010	Building Exterior	7164600	Exterior Walls, Concrete Block (CMU), Replace	50	48	2	100	SF	$20.00	$29.75	$2,975			$2,975																			**$2,975**
B2050	Building Exterior	7164597	Exterior Door, Steel, Standard, Replace	40	20	20	2	EA	$600.00	$892.62	$1,785																					$1,785	**$1,785**
B3010	Roof	7164598	Roofing, Single-Ply Membrane, EPDM, Replace	20	19	1	850	SF	$11.00	$16.36	$13,910		$13,910																				**$13,910**
D3060	Roof	7164590	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	12	8	1	EA	$1,400.00	$2,082.78	$2,083										$2,083												**$2,083**
D5020	Interior	7164595	Motor Control Center, w/ Main Breaker, Replace	30	22	8	1	EA	$15,000.00	$22,315.50	$22,316										$22,316												**$22,316**
D5020	Throughout building	7164591	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity, Replace	40	20	20	850	SF	$13.00	$19.34	$16,439																					$16,439	**$16,439**
D5040	Throughout building	7164594	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	10	10	850	SF	$2.10	$3.12	$2,656												$2,656										**$2,656**
G4050	Building exterior	7164601	Exterior Fixture w/ Lamp, any type, w/ LED Replacement, Replace	20	10	10	1	EA	$600.00	$892.62	$893												$893										**$893**
Totals, Unescalated												**$0**	**$19,266**	**$2,975**	**$0**	**$0**	**$0**	**$0**	**$0**	**$24,398**	**$0**	**$3,548**	**$0**	**$0**	**$0**	**$0**	**$6,695**	**$0**	**$0**	**$0**	**$0**	**$18,224**	**$75,107**
Totals, Escalated (3.0% inflation, compounded annually)												**$0**	**$19,844**	**$3,157**	**$0**	**$0**	**$0**	**$0**	**$0**	**$30,907**	**$0**	**$4,768**	**$0**	**$0**	**$0**	**$0**	**$10,430**	**$0**	**$0**	**$0**	**$0**	**$32,915**	**$102,021**

San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #8E

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup	*Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
B2010	Building Exterior	7164604	Exterior Walls, any painted surface, Prep & Paint	10	5	5	330	SF	$3.00	$4.46	$1,473						$1,473										$1,473						**$2,946**
B2050	Building Exterior	7164608	Exterior Door, Steel, Standard, Replace	40	20	20	1	EA	$600.00	$892.62	$893																					$893	**$893**
B3010	Roof	7164602	Roofing, Metal, Replace	40	20	20	70	SF	$13.00	$19.34	$1,354																					$1,354	**$1,354**
D3060	Roof	7164607	Exhaust Fan, Centrifugal, 16" Damper, Replace	25	12	13	1	EA	$2,400.00	$3,570.48	$3,570														$3,570								**$3,570**
D5020	Throughout building	7164603	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity, Replace	40	20	20	70	SF	$13.00	$19.34	$1,354																					$1,354	**$1,354**
D5040	Throughout building	7164606	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	10	10	70	SF	$2.10	$3.12	$219												$219										**$219**
Totals, Unescalated												**$0**	**$0**	**$0**	**$0**	**$0**	**$1,473**	**$0**	**$0**	**$0**	**$0**	**$219**	**$0**	**$0**	**$3,570**	**$0**	**$1,473**	**$0**	**$0**	**$0**	**$0**	**$3,600**	**$10,335**
Totals, Escalated (3.0% inflation, compounded annually)												**$0**	**$0**	**$0**	**$0**	**$0**	**$1,707**	**$0**	**$0**	**$0**	**$0**	**$294**	**$0**	**$0**	**$5,243**	**$0**	**$2,295**	**$0**	**$0**	**$0**	**$0**	**$6,502**	**$16,042**

San Gabriel Water Yard/Plant - Multiple Buildings / Plant - Well Shed #9E

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup	*Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
B2010	Building Exterior	7164613	Exterior Walls, any painted surface, Prep & Paint	10	5	5	330	SF	$3.00	$4.46	$1,473						$1,473										$1,473						**$2,946**
B2050	Building Exterior	7164609	Exterior Door, Steel, Standard, Replace	40	20	20	1	EA	$600.00	$892.62	$893																					$893	**$893**
B3010	Roof	7164615	Roofing, Metal, Replace	40	20	20	70	SF	$13.00	$19.34	$1,354																					$1,354	**$1,354**
D3060	Roof	7164610	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	10	10	1	EA	$2,400.00	$3,570.48	$3,570												$3,570										**$3,570**
D5020	Throughout building	7164611	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity, Replace	40	20	20	70	SF	$13.00	$19.34	$1,354																					$1,354	**$1,354**
D5040	Throughout building	7164612	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	10	10	70	SF	$2.10	$3.12	$219												$219										**$219**
Totals, Unescalated												**$0**	**$0**	**$0**	**$0**	**$0**	**$1,473**	**$0**	**$0**	**$0**	**$0**	**$3,789**	**$0**	**$0**	**$0**	**$0**	**$1,473**	**$0**	**$0**	**$0**	**$0**	**$3,600**	**$10,335**

Replacement Reserves Report

2/16/2024

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup	*Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
Totals, Escalated (3.0% inflation, compounded annually)												**$0**	**$0**	**$0**	**$0**	**$0**	**$1,707**	**$0**	**$0**	**$0**	**$0**	**$5,092**	**$0**	**$0**	**$0**	**$0**	**$2,295**	**$0**	**$0**	**$0**	**$0**	**$6,502**	**$15,597**

San Gabriel Water Yard/Plant - Multiple Buildings / Site

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup	*Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
D5020	Well	7164674	Switchboard, 277/480 V, Replace	40	29	11	1	EA	$35,000.00	$52,069.50	$52,070												$52,070										**$52,070**
D7010	Site	7164686	Vehicular Access Devices, Gate w/ Controller, Replace	15	7	8	1	EA	$9,000.00	$13,389.30	$13,389									$13,389													**$13,389**
D7030	Site	7187093	Security Camera, Closed Circuit Exterior, Fixed Color, Replace	10	7	3	8	EA	$3,540.00	$5,266.46	$42,132				$42,132										$42,132								**$84,263**
G2020	Site	7164677	Parking Lots, Pavement, Asphalt, Seal & Stripe	5	1	4	28000	SF	$0.45	$0.67	$18,745					$18,745					$18,745					$18,745					$18,745		**$74,980**
G2020	Site	7164682	Parking Lots, Pavement, Asphalt, Mill & Overlay	25	6	19	28000	SF	$3.50	$5.21	$145,795															$18,745					$145,795		**$145,795**
G2060	Site	7164690	Fences & Gates, Vehicle Gate, Metal Manual, Replace	25	12	13	1	EA	$1,700.00	$2,529.09	$2,529														$2,529								**$2,529**
G2060	Site	7164689	Fences & Gates, Fence, Chain Link 8', Replace	40	20	20	3000	LF	$25.00	$37.19	$111,578																					$111,578	**$111,578**
G2060	Site	7164685	Retaining Wall, Concrete Masonry Unit (CMU), Replace	40	20	20	4800	SF	$60.00	$89.26	$428,458																					$428,458	**$428,458**
G2080	Site	7164647	Landscaping, Mature Trees, Removal/Trimming, Repair	0	0	0	1	EA	$1,500.00	$2,231.55	$2,232	$2,232																					**$2,232**
G4050	Site	7164681	Pole Light Fixture w/ Lamps, any type 20' High, w/ LED Replacement, Replace/Install	20	10	10	3	EA	$4,000.00	$5,950.80	$17,852											$17,852											**$17,852**
Totals, Unescalated												**$2,232**	**$0**	**$0**	**$42,132**	**$18,745**	**$0**	**$0**	**$0**	**$13,389**	**$18,745**	**$17,852**	**$52,070**	**$0**	**$44,661**	**$18,745**	**$0**	**$0**	**$0**	**$0**	**$164,540**	**$540,035**	**$933,145**
Totals, Escalated (3.0% inflation, compounded annually)												**$2,232**	**$0**	**$0**	**$46,038**	**$21,098**	**$0**	**$0**	**$0**	**$16,961**	**$24,458**	**$23,992**	**$72,076**	**$0**	**$65,586**	**$28,354**	**$0**	**$0**	**$0**	**$0**	**$288,521**	**$975,363**	**$1,564,679**

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Drained Vault

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Manifold

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Booster Building and Boosters

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup *	Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
B1010	Chlorine Room	7164635	Structural Flooring/Decking, Concrete, Repair	0	0	0	350	SF	$30.00	$44.63	$15,621	$15,621																					**$15,621**
B2010	Building Exterior	7164639	Exterior Walls, any painted surface, Prep & Paint	10	5	5	4500	SF	$3.00	$4.46	$20,084						$20,084										$20,084						**$40,168**
B2020	Building Exterior	7164628	Window, Steel, 16-25 SF, Replace	30	10	20	9	EA	$1,700.00	$2,529.09	$22,762																					$22,762	**$22,762**
B2050	Building Exterior	7164624	Overhead/Dock Door, Steel, 20'x20' (400 SF), Replace	30	10	20	2	EA	$9,000.00	$13,389.30	$26,779																					$26,779	**$26,779**
B2050	Building Exterior	7164631	Overhead/Dock Door, Steel, 12'x12' (144 SF), Replace	30	10	20	1	EA	$3,200.00	$4,760.64	$4,761																					$4,761	**$4,761**
B3060	Roof	7164638	Roof Skylight, per unit, up to 20 SF, Replace	30	10	20	18	EA	$1,300.00	$1,934.01	$34,812																					$34,812	**$34,812**
D2010	Building exterior	7164633	Backflow Preventer, Domestic Water, Replace	30	10	20	1	EA	$10,500.00	$15,620.85	$15,621																					$15,621	**$15,621**
D2010	Building exterior	7164632	Backflow Preventer, Domestic Water, Replace	30	10	20	1	EA	$14,400.00	$21,422.88	$21,423																					$21,423	**$21,423**
D3060	Roof	7164617	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164643	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164637	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164629	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164618	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164627	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164646	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164640	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D3060	Roof	7164636	Exhaust Fan, Roof or Wall-Mounted, 10" Damper, Replace	20	10	10	1	EA	$1,200.00	$1,785.24	$1,785											$1,785											**$1,785**
D5010	Building exterior	7187092	Generator, Diesel, 760 to 1000 KW, Replace	25	20	5	1	EA	$280,000.00	$416,556.00	$416,556						$416,556																**$416,556**
D5010	Building exterior	7164641	Generator, Diesel, Replace	25	6	19	1	EA	$280,000.00	$416,556.00	$416,556																				$416,556		**$416,556**
D5010	Building exterior	7164619	Automatic Transfer Switch, ATS, Replace	25	10	15	1	EA	$12,000.00	$17,852.40	$17,852																$17,852						**$17,852**
D5020	Booster Room	7164626	Motor Control Center, w/ Main Breaker, Replace	30	10	20	1	EA	$35,000.00	$52,069.50	$52,070																					$52,070	**$52,070**
D5020	Booster Room	7164642	Motor Control Center, w/ Main Breaker, Replace	30	10	20	1	EA	$35,000.00	$52,069.50	$52,070																					$52,070	**$52,070**
D5040	Throughout building	7164616	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	10	10	4764	SF	$2.10	$3.12	$14,884											$14,884											**$14,884**
D7030	Throughout building	7164645	Security/Surveillance System, Full System Upgrade, Average Density, Replace	15	7	8	4764	SF	$2.00	$2.98	$14,175									$14,175													**$14,175**
G4050	Building exterior	7164621	Exterior Fixture w/ Lamp, any type, w/ LED Replacement, Replace	20	10	10	4	EA	$600.00	$892.62	$3,570											$3,570											**$3,570**
Totals, Unescalated												**$15,621**	**$0**	**$0**	**$0**	**$0**	**$436,640**	**$0**	**$0**	**$14,175**	**$0**	**$34,521**	**$0**	**$0**	**$0**	**$0**	**$37,936**	**$0**	**$0**	**$0**	**$416,556**	**$230,296**	**$1,185,745**
Totals, Escalated (3.0% inflation, compounded annually)												**$15,621**	**$0**	**$0**	**$0**	**$0**	**$506,185**	**$0**	**$0**	**$17,956**	**$0**	**$46,394**	**$0**	**$0**	**$0**	**$0**	**$59,104**	**$0**	**$0**	**$0**	**$730,433**	**$415,940**	**$1,791,633**

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Pump Nos. 1-5

Replacement Reserves Report

2/16/2024

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Warehouse

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup *	Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
B2010	Building Exterior	7164669	Exterior Walls, any painted surface, Prep & Paint	10	5	5	1500	SF	$3.00	$4.46	$6,695						$6,695										$6,695						**$13,389**
B2020	Building Exterior	7164652	Window, Steel, 16-25 SF, Replace	30	10	20	11	EA	$1,700.00	$2,529.09	$27,820																					$27,820	**$27,820**
B2050	Building Exterior	7164664	Overhead/Dock Door, Steel, 20'x20' (400 SF), Replace	30	10	20	2	EA	$9,000.00	$13,389.30	$26,779																					$26,779	**$26,779**
C2010	Throughout building	7164650	Wall Finishes, any surface, Prep & Paint	10	5	5	1200	SF	$1.50	$2.23	$2,678						$2,678										$2,678						**$5,356**
C2030	Office	7164651	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	10	5	5	800	SF	$1.50	$2.23	$1,785						$1,785										$1,785						**$3,570**
C2050	Throughout building	7164654	Ceiling Finishes, any flat surface, Prep & Paint	10	5	5	800	SF	$2.00	$2.98	$2,380						$2,380										$2,380						**$4,761**
D2010	Restrooms	7164659	Water Heater, Electric, Instant Hot, Replace	15	10	5	1	EA	$500.00	$743.85	$744						$744															$744	**$1,488**
D2010	Restrooms	7164649	Toilet, Residential Water Closet, Replace	30	10	20	1	EA	$700.00	$1,041.39	$1,041																					$1,041	**$1,041**
D2010	Restrooms	7164658	Sink/Lavatory, Wall-Hung, Enameled Steel, Replace	30	10	20	1	EA	$1,700.00	$2,529.09	$2,529																					$2,529	**$2,529**
D3030	Building exterior	7164656	Split System Ductless, Single Zone, Replace	15	1	14	1	EA	$4,800.00	$7,140.96	$7,141															$7,141							**$7,141**
D3060	Roof	7164661	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	10	10	1	EA	$2,400.00	$3,570.48	$3,570											$3,570											**$3,570**
D3060	Roof	7164671	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	10	10	1	EA	$2,400.00	$3,570.48	$3,570											$3,570											**$3,570**
D3060	Roof	7164665	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	10	10	1	EA	$2,400.00	$3,570.48	$3,570											$3,570											**$3,570**
D5020	Office	7164662	Distribution Panel, 277/480 V, Replace	30	10	20	1	EA	$3,000.00	$4,463.10	$4,463																					$4,463	**$4,463**
D5040	Throughout building	7164670	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	10	10	3200	SF	$2.10	$3.12	$9,997											$9,997											**$9,997**
D7030	Yard - New Warehouse	7164663	Security/Surveillance System, Full System Upgrade, Average Density, Replace	15	10	5	3200	SF	$2.00	$2.98	$9,521						$9,521															$9,521	**$19,043**
G4050	Building exterior	7164648	Exterior Fixture w/ Lamp, any type, w/ LED Replacement, Replace	20	18	2	3	EA	$600.00	$892.62	$2,678			$2,678																			**$2,678**
Totals, Unescalated												**$0**	**$0**	**$2,678**	**$0**	**$0**	**$23,803**	**$0**	**$0**	**$0**	**$0**	**$20,709**	**$0**	**$0**	**$0**	**$7,141**	**$13,538**	**$0**	**$0**	**$0**	**$0**	**$72,897**	**$140,766**
Totals, Escalated (3.0% inflation, compounded annually)												**$0**	**$0**	**$2,841**	**$0**	**$0**	**$27,594**	**$0**	**$0**	**$0**	**$0**	**$27,831**	**$0**	**$0**	**$0**	**$10,801**	**$21,092**	**$0**	**$0**	**$0**	**$0**	**$131,661**	**$221,820**

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Storage Building

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost	w/ Markup *	Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
B1010	Storage Building (Old Booster Building)	7164684	Structural Framing, Wood, Conventional Stud, Conventional Stud	75	74	1	600	SF	$18.00	$26.78	$16,067		$16,067																				**$16,067**
B1010	Storage Building (Old Booster Building)	7164692	Structural Flooring/Decking, Concrete, Repair	0	0	0	600	SF	$30.00	$44.63	$26,779	$26,779																					**$26,779**
B2050	Storage Building (Old Booster Building)	7164688	Exterior Door, Steel, Standard, Replace	40	20	20	1	EA	$600.00	$892.62	$893																					$893	**$893**
B2050	Storage Building (Old Booster Building)	7164687	Overhead/Dock Door, Steel, 12'x12' (144 SF), Replace	30	15	15	2	EA	$3,200.00	$4,760.64	$9,521																	$9,521					**$9,521**
B3010	Storage Building (Old Booster Building)	7164691	Roofing, Single-Ply Membrane, EPDM, Replace	20	19	1	1200	SF	$11.00	$16.36	$19,638		$19,638																				**$19,638**
D5020	Storage Building (Old Booster Building)	7164678	Secondary Transformer, Dry, Stepdown, Replace	30	15	15	1	EA	$6,700.00	$9,967.59	$9,968																	$9,968					**$9,968**
D5020	Storage Building (Old Booster Building)	7164679	Motor Control Center, w/ Main Breaker, Replace	30	15	15	1	EA	$15,000.00	$22,315.50	$22,316																	$22,316					**$22,316**
D5020	Throughout	7187085	Electrical System, Full System Renovation/Upgrade, Low Density/Complexity, Replace	40	20	20	1200	SF	$13.00	$19.34	$23,208																					$23,208	**$23,208**
D5040	Throughout	7187084	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	10	10	1200	SF	$2.10	$3.12	$3,749												$3,749										**$3,749**
G4050	Storage Building (Old Booster Building)	7164680	Exterior Fixture w/ Lamp, any type, w/ LED Replacement, Replace	20	10	10	5	EA	$600.00	$892.62	$4,463												$4,463										**$4,463**
Totals, Unescalated												**$26,779**	**$35,705**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$8,212**	**$0**	**$0**	**$0**	**$0**	**$41,804**	**$0**	**$0**	**$0**	**$0**	**$24,101**	**$136,601**
Totals, Escalated (3.0% inflation, compounded annually)												**$26,779**	**$36,776**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$11,036**	**$0**	**$0**	**$0**	**$0**	**$65,130**	**$0**	**$0**	**$0**	**$0**	**$43,529**	**$183,249**

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Surge Tank Flow Meter Vault

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Well #5E

San Gabriel Water Yard/Plant - Multiple Buildings / Yard - Well 12 Flow Meter Vault

Appendix G:
Equipment Inventory List

Mechanical Inventory - San Gabriel Water Yard/Plant - Multiple Buildings / Yard - New Warehouse							
Equipment Location	Equipment	Capacity	Quantity	Year	Make	Model	Serial
Restrooms	Water Heater	2.7 Gal	1	Unknown	Bosch	ES 2.5-1M WIR	18370 040 002011
Building exterior	Backflow Preventer	6 IN	1	2013	CLA-VAL	No dataplate	No dataplate
Building exterior	Backflow Preventer	8 IN	1	2013	No dataplate	No dataplate	No dataplate
Building exterior	Split System Ductless	1.5 TON	1	2022	Samsung	AR18BSFCMWKX	No dataplate
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Greenheck	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	2013	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	2013	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	Unknown	Greenheck	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	2013	Inaccessible	Inaccessible	Inaccessible
Roof	Exhaust Fan	Inaccessible CFM	1	2013	Inaccessible	Inaccessible	Inaccessible

Appendix H:
Energy Conservation Measures Calculations

UIC	**Upgrade Building Lighting to LED and Install Automatic Lighting Controls**
EAL10	**Location: Building Interior and Exterior - San Gabriel Water Yard/Plant - Multiple Buildings**
Attributes:	**Replace HID (2x) ;Linear Fluorescent (98x) ;**

	No. of ECMs	No. of Fixtures	No. of Lamps	KWh Saved	Energy Cost Saving	O & M Savings
Upgrade Lighting to LED	40	100	208	6,733	$2,019.89	$149.33

Existing Technology	**Sub-Technology**	No. of ECMs	No. of Fixtures	No. of Lamps	KWh Saved	Energy Cost Saving	O & M Savings
CFL	CFL - 2 Pin	0	0	0	0	$0	$0
CFL	CFL - 4 Pin	0	0	0	0	$0	$0
CFL	CFL - Screw-in	0	0	0	0	$0	$0
Circiline	T9	0	0	0	0	$0	$0
Incan/H/MR	H	0	0	0	0	$0	$0
Incan/H/MR	Incan	0	0	0	0	$0	$0
Incan/H/MR	MR	0	0	0	0	$0	$0
HID	HPS	0	0	0	0	$0	$0
HID	MH	1	2	2	961	$288	$17
HID	MV	0	0	0	0	$0	$0
HID	QL	0	0	0	0	$0	$0
Linear Fluorescent	T8	7	95	95	5,554	$1,666	$130
Linear Fluorescent	T12	1	3	3	218	$66	$2
Linear Fluorescent	T8 U	0	0	0	0	$0	$0
Linear Fluorescent	T12 U	0	0	0	0	$0	$0
Linear Fluorescent	T5	0	0	0	0	$0	$0
Linear Fluorescent	T6	0	0	0	0	$0	$0
Linear Fluorescent	T10	0	0	0	0	$0	$0

Proposed Controls	**No. of Controls**		**No. of Controls**
Photo Sensor	0	Ceiling Mounted	0
Wall Mounted	0		

Initial Investment			**Equipment Rentals**	
Material Cost	$2,885.32		Scissor Lift 26' - Interior Spaces	$370.00
Labor Cost	$1,956.88		Bucket Truck - Exterior Spaces	$0.00
Local Electric Rate:	$0.30	$/kWh	Estimated Annual Energy Savings:	6,733
			Estimated Demand Savings:	9
Hourly Labor Rate For Electrician:	$72.05		Estimated Annual Energy Cost Savings:	$2,020
Budgeted Initial Investment:	$5,212		Estimated Annual O&M Cost Savings:	$149
Estimated Return on Investment:	2.40	Years	Estimated Annual Cost Savings:	$2,169
(Including O&M Savings)				

Appendix I:
Lighting System Schedule

Lighting Schedule - Existing

							Lamp Details				Fixture Details						Existing Consumption	
Line No.	Interior/ Exterior	Space Type	Room No.	LUX	Control Quantity	Existing Control	Technology	Sub-Technology	Lamp Type	Total Lamps	Fixture Type	Linear Fluorescent Fixture Lens	Fixture Mounting	Fixture Quantity	24x7 Fixture Count	Fixture Height	Annual Hours	Existing Annual kWh
1	Interior	Storage	Storage	-	1	Light Switch	Linear Fluorescent	T8	4' 32W T8	4	Troffer - Surface Mounted Direct 1'x4'	None	Surface Mount	2	No	≥ 9	2,080	266
2	Interior	Storage	Storage	-	1	Light Switch	Linear Fluorescent	T8	4' 32W T8	8	Troffer - Surface Mounted Direct 1'x4'	None	Surface Mount	2	No	≥ 9	2,080	532
3	Interior	Warehouse	New Warehouse	-	1	Light Switch	Linear Fluorescent	T8	8' 54W T8	50	Strip 8'	None		25	No	≥ 9	4,368	11,794
4	Interior	Warehouse	New Warehouse	-	1	Timer	HID	MH	MH150	2	Wallpack Horizontal	Clear Acrylic	Surface Mount	2	No	10-15	4,368	1,310
5	Interior	Mechanical Room	Chlorine	-	1	Light Switch	Linear Fluorescent	T8	4' 32W T8	32	Troffer - Surface Mounted Indirect 1'x4'	Clear Acrylic	Surface Mount	16	No	15-20	1,040	1,065
6	Interior	Mechanical Room	Booster	-	1	Light Switch	Linear Fluorescent	T8	4' 32W T8	96	Troffer - Surface Mounted Indirect 1'x4'	Clear Acrylic	Surface Mount	48	No	15-20	1,040	3,195
7	Interior	Boiler Room	Well	-	1	Light Switch	Linear Fluorescent	T8	4' 32W T8	2	Troffer - Surface Mounted Indirect 1'x4'	Clear Acrylic	Surface Mount	1	No	≥ 9	2,080	133
8	Interior	Boiler Room	Well	-	1	Light Switch	Linear Fluorescent	T8	4' 32W T8	2	Troffer - Surface Mounted Indirect 1'x4'	Clear Acrylic	Surface Mount	1	No	≥ 9	2,080	133
9	Interior	Electrical Room	Storage	-	1	Light Switch	Linear Fluorescent	T12	8' 75W T12	12	Strip 8'	None		3	No	10-15	520	468
										208				100			19,656	18,897

Lighting Solutions - Proposed

							Fixture Details						Existing Consumption					Proposed- Post Retrofit				
Line No.	Building Name	Interior/ Exterior	Space Type	Room No.	Existing Control	Control Quantity	Technology	Sub-Technology	Lamp- Fixture	Fixture Quantity	Total Lamps	Fixture Height	Annual Hours	Existing Annual kWh	KW Reduction	ECM	ECM Type	Recommended Sensor	LED Lamp Retrofit	Annual Hours of Operation	Proposed Annual kWh	Annual Savings From LED Retrofit
																						kWh
1	I Water Yard/Plant - Multip	Interior	Storage	Storage	Light Switch	1	Linear Fluorescent	T8	4' 32W T8; Troffer - Surface Mounted Di	2	4	≥ 9	2,080	266	0.13	ECM	RB - Replace Bulb	Retain Existing Controls	4' 17W LED T8	2,080	141	125
2	I Water Yard/Plant - Multip	Interior	Storage	Storage	Light Switch	1	Linear Fluorescent	T8	I150-Flood; Can - Recessed Vertical 8"	2	8	≥ 9	2,080	532	0.26	ECM	RB - Replace Bulb	Retain Existing Controls	4' 17W LED T8	2,080	283	250
3	I Water Yard/Plant - Multip	Interior	Warehouse	New Warehouse	Light Switch	1	Linear Fluorescent	T8	8' 54W T8; Strip 8'	25	50	≥ 9	4,368	11,794	2.70	ECM	RB - Replace Bulb	Retain Existing Controls	8' 40W LED T8	4,368	8,736	3,058
4	I Water Yard/Plant - Multip	Interior	Warehouse	New Warehouse	Timer	1	HID	MH	MH150; Wallpack-Horizontal	2	2	10-15	4,368	1,310	0.30	ECM	RB - Replace Bulb	Retain Existing Controls	40W LED Wall Pack	4,368	349	961
5	I Water Yard/Plant - Multip	Interior	Mechanical Room	Chlorine	Light Switch	1	Linear Fluorescent	T8	4' 32W T8; Troffer - Surface Mounted In	16	32	15-20	1,040	1,065	1.02	ECM	RB - Replace Bulb	Retain Existing Controls	4' 17W LED T8	1,040	566	499
6	I Water Yard/Plant - Multip	Interior	Mechanical Room	Booster	Light Switch	1	Linear Fluorescent	T8	4' 32W T8; Troffer - Surface Mounted In	48	96	15-20	1,040	3,195	3.07	ECM	RB - Replace Bulb	Retain Existing Controls	4' 17W LED T8	1,040	1,697	1,498
7	I Water Yard/Plant - Multip	Interior	Boiler Room	Well	Light Switch	1	Linear Fluorescent	T8	4' 32W T8; Troffer - Surface Mounted In	1	2	≥ 9	2,080	133	0.06	ECM	RB - Replace Bulb	Retain Existing Controls	4' 17W LED T8	2,080	71	62
8	I Water Yard/Plant - Multip	Interior	Boiler Room	Well	Light Switch	1	Linear Fluorescent	T8	4' 32W T8; Troffer - Surface Mounted In	1	2	≥ 9	2,080	133	0.06	ECM	RB - Replace Bulb	Retain Existing Controls	4' 17W LED T8	2,080	71	62
9	I Water Yard/Plant - Multip	Interior	Electrical Room	Storage	Light Switch	1	Linear Fluorescent	T12	8' 75W T12; Strip 8'	3	12	10-15	520	468	0.90	ECM	RB - Replace Bulb	Retain Existing Controls	8' 40W LED T8	520	250	218
	Totals										208				9						12,164	6,733

Appendix J:
Energy Audit Glossary of Terms

Glossary of Terms and Acronyms

ECM – Energy Conservation Measures are projects recommended to reduce energy consumption. These can be No/Low cost items implemented as part of routine maintenance or Capital Cost items to be implemented as a capital improvement project.

Initial Investment – The estimated cost of implementing an ECM project. Estimates typically are based on R.S. Means Construction cost data and Industry Standards.

Annual Energy Savings – The reduction in energy consumption attributable to the implementation of a particular ECM. These savings values do not include the interactive effects of other ECMs.

Cost Savings – The expected reduction in utility or energy costs achieved through the corresponding reduction in energy consumption by implementation of an ECM.

Simple Payback Period –The number of years required for the cumulative value of energy or water cost savings less future non-fuel or non-water costs to equal the investment costs of the building energy or water system, without consideration of discount rates.

EUL – Expected Useful Life is the estimated lifespan of a typical piece of equipment based on industry accepted standards.

RUL – Remaining Useful Life is the EUL minus the effective age of the equipment and reflects the estimated number of operating years remaining for the item.

SIR - The savings-to-investment ratio is the ratio of the present value savings to the present value costs of an energy or water conservation measure. The numerator of the ratio is the present value of net savings in energy or water and non-fuel or non-water operation and maintenance costs attributable to the proposed energy or water conservation measure. The denominator of the ratio is the present value of the net increase in investment and replacement costs less salvage value attributable to the proposed energy or water conservation measure. It is recommended that energy-efficiency recommendations be based on a calculated SIR, with larger SIRs receiving a higher priority. A project typically is recommended only if the SIR is greater than or equal to 1.0, unless other factors outweigh the financial benefit.

Life Cycle Cost - The sum of the present values of (a) **I**nvestment costs, less salvage values at the end of the study period; (b) Non-fuel operation and maintenance costs: (c) Replacement costs less salvage costs of replaced building systems; and (d) Energy and/or water costs.

Life Cycle Savings – The sum of the estimated annual cost savings over the EUL of the recommended ECM, expressed in present value dollars.

Building Site Energy Use Intensity - The sum of the total site energy use in thousands of Btu per unit of gross building area. Site energy accounts for all energy consumed at the building location only not the energy consumed during generation and transmission of the energy to the site.

Building Source Energy Use Intensity – The sum of the total source energy use in thousands of Btu per unit of gross building area. Source energy is the energy consumed during generation and transmission in supplying the energy to your site.

Building Cost Intensity - This metric is the sum of all energy use costs in dollars per unit of gross building area.

Greenhouse Gas Emissions - Although there are numerous gases that are classified as contributors to the total for Greenhouse Emissions, the scope of this energy audit focuses on carbon dioxide (CO_2). Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement).