FACILITY CONDITION ASSESSMENT & ENERGY AUDIT

prepared for

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

Transportation Center Building/Garage
410 East Dalton Avenue
Glendora, California 91741

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BV PROJECT #:
158691.23R000-033.379

DATE OF REPORT:
February 16, 2024

ON SITE DATE:
December 13, 2023

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1. Executive Summary

Campus Overview and Assessment Details

General Information	
Property Type	Office / Maintenance Garage
Number of Buildings	Two
Main Address	410 East Dalton Avenue, Glendora, California 91741
Site Developed	Transportation Center Building: 1995 Garage: 1995
Current Occupants	City of Glendora
Date(s) of Visit	December 13, 2023
Management Point of Contact	City of Glendora, Ryan Hacecky, Facilities Maintenance Supervisor 626.672.6306 rhacecky@cityofglendora.org email
On-site Point of Contact (POC)	same as above
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 Transportation Center Building and Garage were constructed in 1995. No recent renovations have been done at the property.

Architectural

The roofing at both buildings is original. The point of contact has reported a history of roof leaks that are repaired as they occur. Evidence of roof leaks was observed in the garage through the interior ceiling tears. Roof replacement is recommended in the near reserve term. Little to no cracking was observed on the exterior walls. However, the walls are stained in multiple locations and are recommended for repainting. According to the point of contact, there are no issues with building movement or settlement. Due to the age of the building though, routine maintenance checks on the foundation are recommended.

The interior finishes are replaced on an as needed basis. Typical lifecycle based interior and exterior finish replacements are budgeted and anticipated in the reserve term.

Mechanical, Electrical, Plumbing and Fire (MEPF)

The HVAC system consists of split system air conditioners and furnaces that are controlled by a programmable thermostat. The HVAC components are original and have aged extensively past their expected useful lives. Replacement with energy efficient units is recommended in the reserve term. The electrical system is controlled by a switchboard that also appears original. Domestic hot water is supplied by a gas storage tank water heater that was replaced in 2021 and is in good condition. Typical commercial plumbing fixtures are utilized in the restrooms. Fire suppression consists of fire extinguishers and nearby fire hydrants.

Site

There is an asphalt parking lot in the front and a concrete lot at the side of the Transportation Center Building. The asphalt and concrete pavement are in overall fair condition with little to no areas of cracking. Site lighting appears to be adequate for the facility's needs.

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.

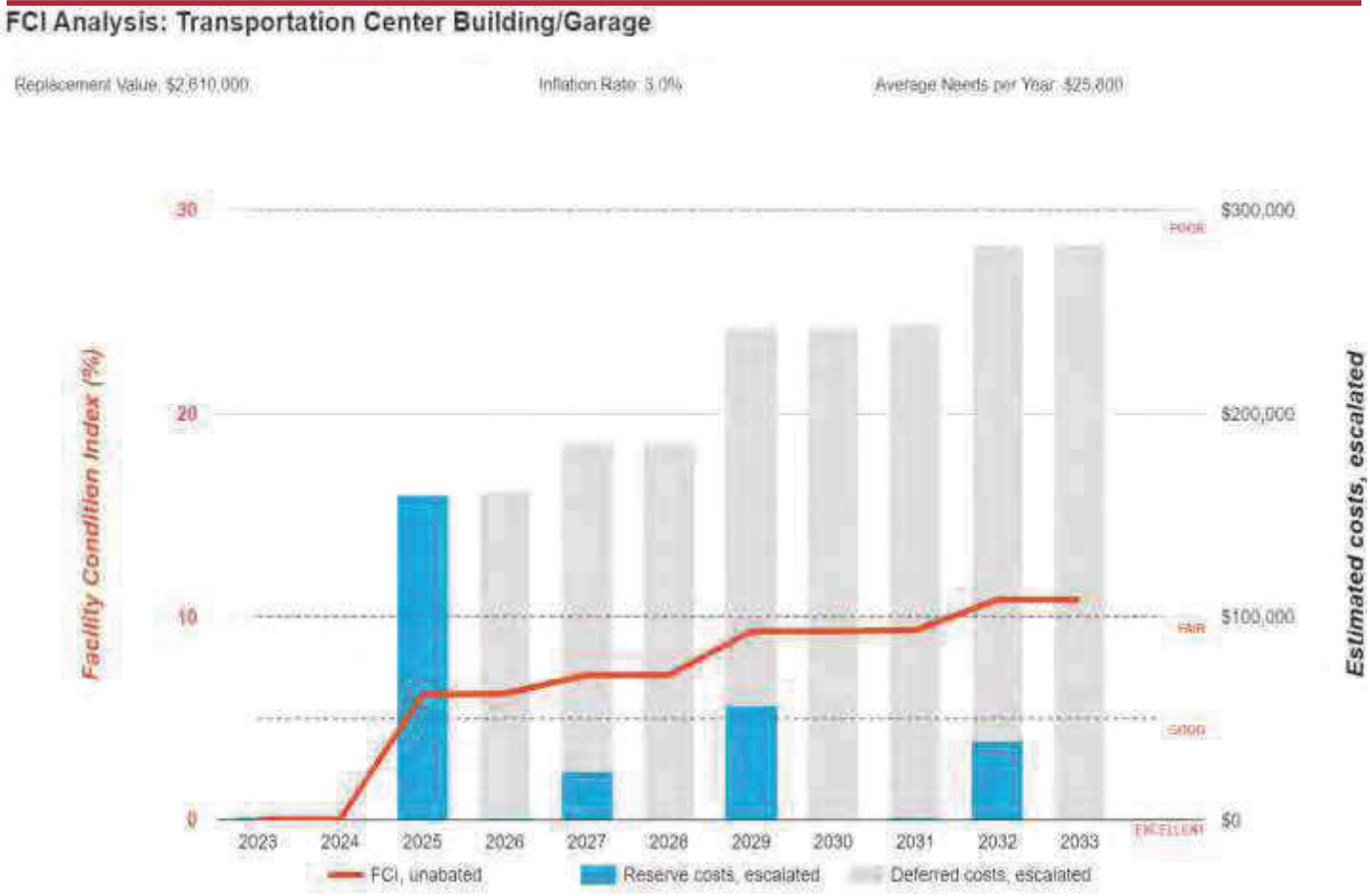
FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little or no visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable 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
Transportation Center Building/Garage / Garage (1995)	$375	1,090	$408,750	0.0%	11.2%	11.2%	15.6%
Transportation Center Building/Garage / Transportation Center Building (1995)	$700	3,256	$2,279,200	0.0%	5.1%	6.1%	8.8%

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



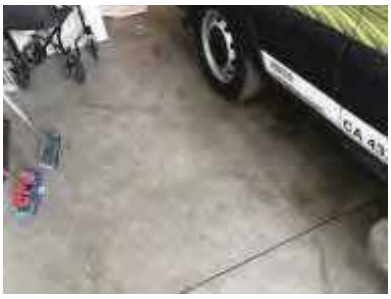
Immediate Needs

Facility/Building	Total Items	Total Cost
Transportation Center Building/Garage / Garage	1	$1,300
Total	**1**	**$1,300**

Garage

ID	Location	Location Description	UF Code	Description	Condition	Plan Type	Cost
7169626	Transportation Center Building/Garage / Garage	Garage	B1010	Structural Flooring/Decking, Concrete, Repair	Poor	Performance/Integrity	$1,300
Total (1 items)							**$1,300**

Key Findings



Structural Flooring/Decking in Poor condition.

Concrete
Garage Transportation Center Building/Garage Garage

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

Priority Score: **89.9**

Plan Type: Performance/Integrity

Cost Estimate: $1,300

**$$**$$

Isolated concrete floor cracking in garage - AssetCALC ID: 7169626

Roofing in Poor condition.

Clay/Concrete Tile
Garage Transportation Center Building/Garage Roof

Uniformat Code: B3010
Recommendation: **Replace in 2025**

Priority Score: **89.8**

Plan Type: Performance/Integrity

Cost Estimate: $33,100

**$$$**$

Roof is aged and has a history of leaks - AssetCALC ID: 7194313

Roofing in Poor condition.

Clay/Concrete Tile
Transportation Center Building Transportation Center Building/Garage Roof

Uniformat Code: B3010
Recommendation: **Replace in 2025**

Priority Score: **89.8**

Plan Type: Performance/Integrity

Cost Estimate: $98,800

$$$$

History of leaks. Roof is aged and deteriorated - AssetCALC ID: 7169657

Exterior Walls in Poor condition.

any painted surface
Transportation Center Building Transportation Center Building/Garage Building Exterior

Uniformat Code: B2010
Recommendation: **Prep and Paint in 2025**

Priority Score: **89.7**

Plan Type: Performance/Integrity

Cost Estimate: $10,300

**$$$**$

Walls are stained and need repainting. - AssetCALC ID: 7169650

Exterior Walls in Poor condition.

any painted surface
Garage Transportation Center Building/Garage
Building Exterior

Uniformat Code: B2010
Recommendation: **Prep and Paint in 2025**

Priority Score: **89.7**

Plan Type:
Performance/Integrity

Cost Estimate: $6,000

**$$**$$

Walls are stained and need repainting. - AssetCALC ID: 7169627

Ceiling Finishes in Poor condition.

Gypsum Board/Plaster
Garage Transportation Center Building/Garage
Garage

Uniformat Code: C2050
Recommendation: **Replace in 2025**

Priority Score: **81.8**

Plan Type:
Performance/Integrity

Cost Estimate: $2,400

**$$**$$

Ceiling tears caused by roof leaks - AssetCALC ID: 7169632

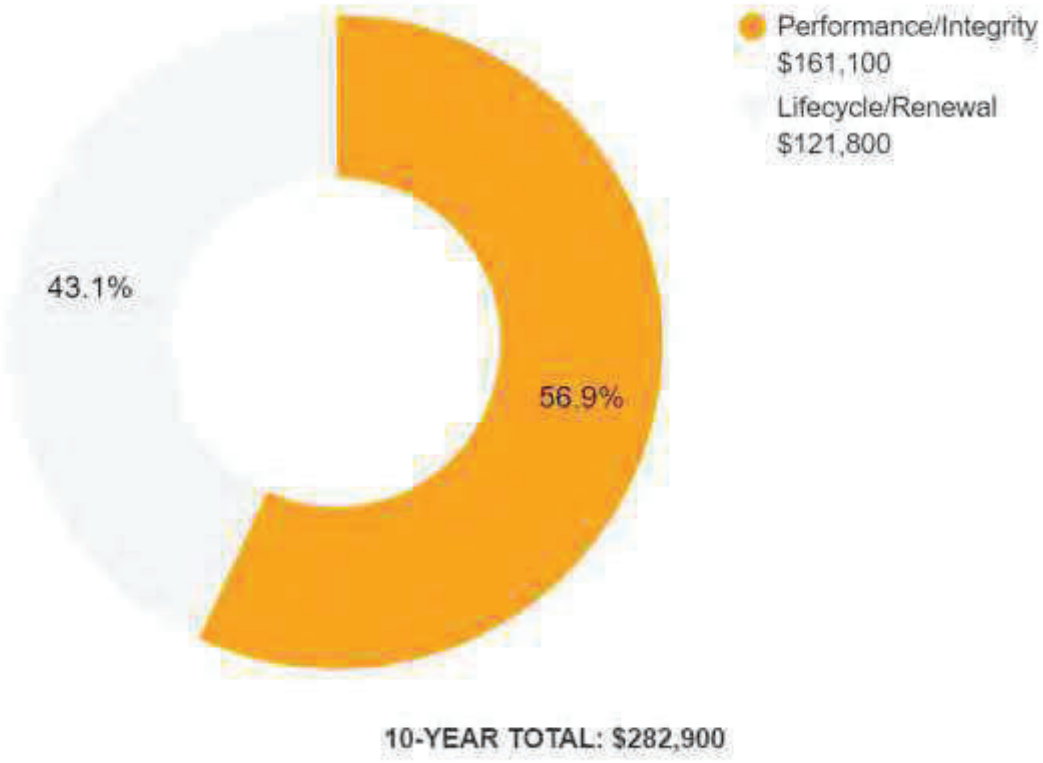
Plan Types

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. Garage

Garage: Systems Summary

Address	410 East Dalton Avenue, Glendora, California 91741	
Constructed/Renovated	1995	
Building Size	1,090 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Masonry bearing walls and steel framed roof	Good
Façade	Painted concrete and stone veneer	Poor
Roof	Gable construction with clay/concrete tiles	Poor
Interiors	Walls: Painted CMU Floors: Unfinished Ceilings: Painted gypsum board	Fair
Elevators	None	--
Plumbing	None	--
HVAC	None	--

Garage: Systems Summary

Fire Suppression	Hydrants, fire extinguishers	Fair
Electrical	Source and Distribution: Main panel with copper wiring Interior Lighting: HPS Emergency: none	Fair
Fire Alarm	Smoke detectors only	Fair
Equipment/Special	Electric vehicle charger	Fair
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	Roof is aged and leaky, stained exterior walls, interior ceiling tears, concrete floor cracking	

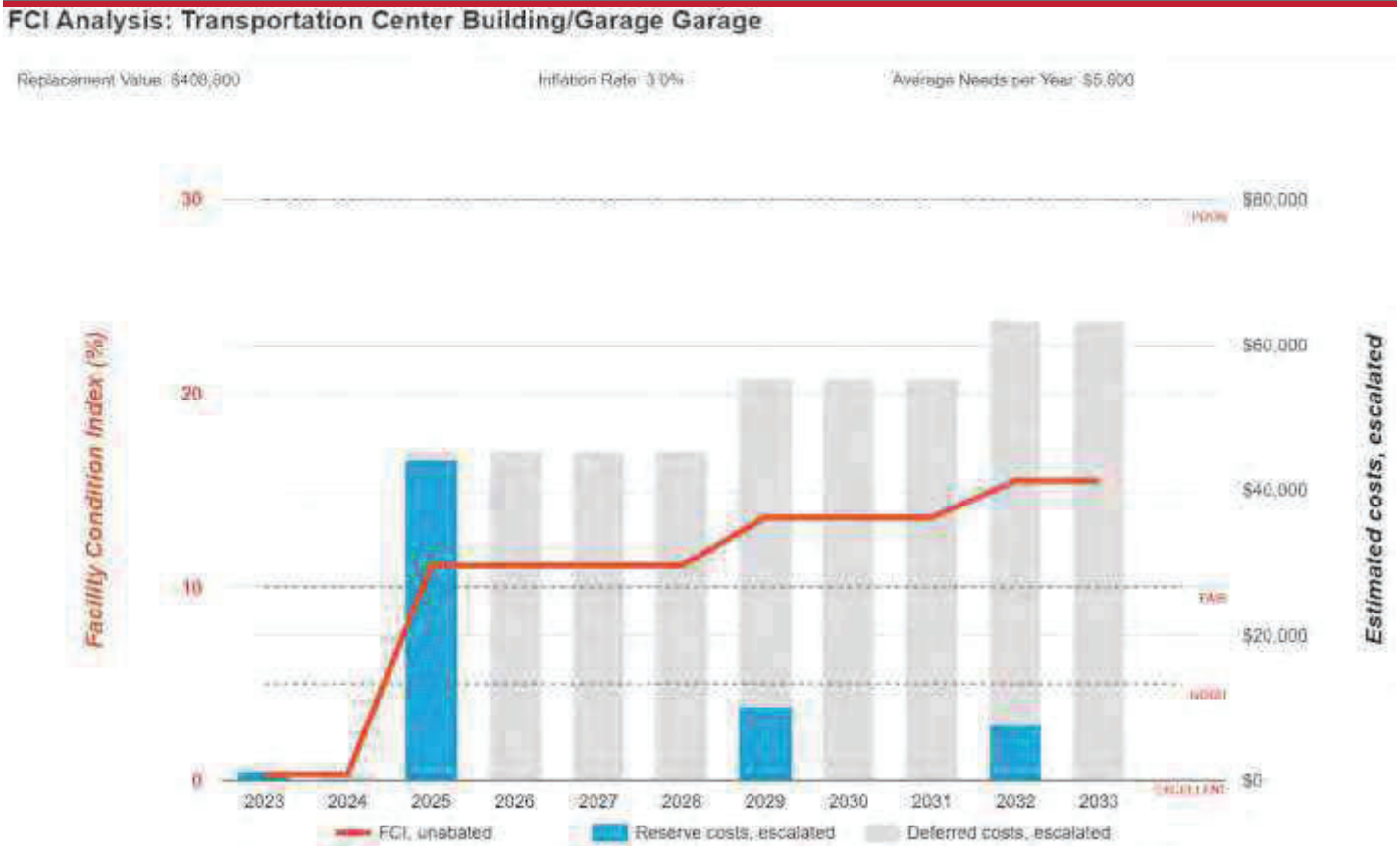
Garage: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$1,300	-	-	-	-	$1,300
Facade	-	$6,400	-	-	$9,900	$16,300
Roofing	-	$35,100	-	-	-	$35,100
Interiors	-	$2,500	-	$8,200	$11,100	$21,800
Electrical	-	-	-	$2,000	$34,800	$36,700
Equipment & Furnishings	-	-	-	$7,800	-	$7,800
Site Utilities	-	-	-	-	$1,200	$1,200
TOTALS (3% inflation)	**$1,300**	**$44,000**	**-**	**$17,900**	**$56,900**	**$120,100**

*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. Transportation Center Building

Transportation Center Building: Systems Summary

Address	410 East Dalton Avenue, Glendora, California 91741	
Constructed/Renovated	1995	
Building Size	3,256 SF	
Number of Stories	One	
System	*Description*	*Condition*
Structure	Masonry bearing walls and wood framed roof	Good
Façade	Painted concrete and stone veneer with vinyl windows	Poor
Roof	Gable construction with clay/concrete tiles	Poor
Interiors	Walls: Painted gypsum board, ceramic tile Floors: Carpet, VCT, vinyl sheeting Ceilings: ACT	Fair
Elevators	None	--
Plumbing	Copper supply and cast iron waste and venting Gas water heater Toilets and sinks in all restrooms	Fair
HVAC	Individual split systems and furnaces	Fair

Transportation Center Building: Systems Summary

Fire Suppression	Hydrants, fire extinguishers	Fair
Electrical	Source and Distribution: Main switchboard with copper wiring Interior Lighting: Linear fluorescent, CFL Emergency: none	Fair
Fire Alarm	Smoke detectors only	Fair
Equipment/Special	None	--
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	Roof leaks, stained exterior walls	

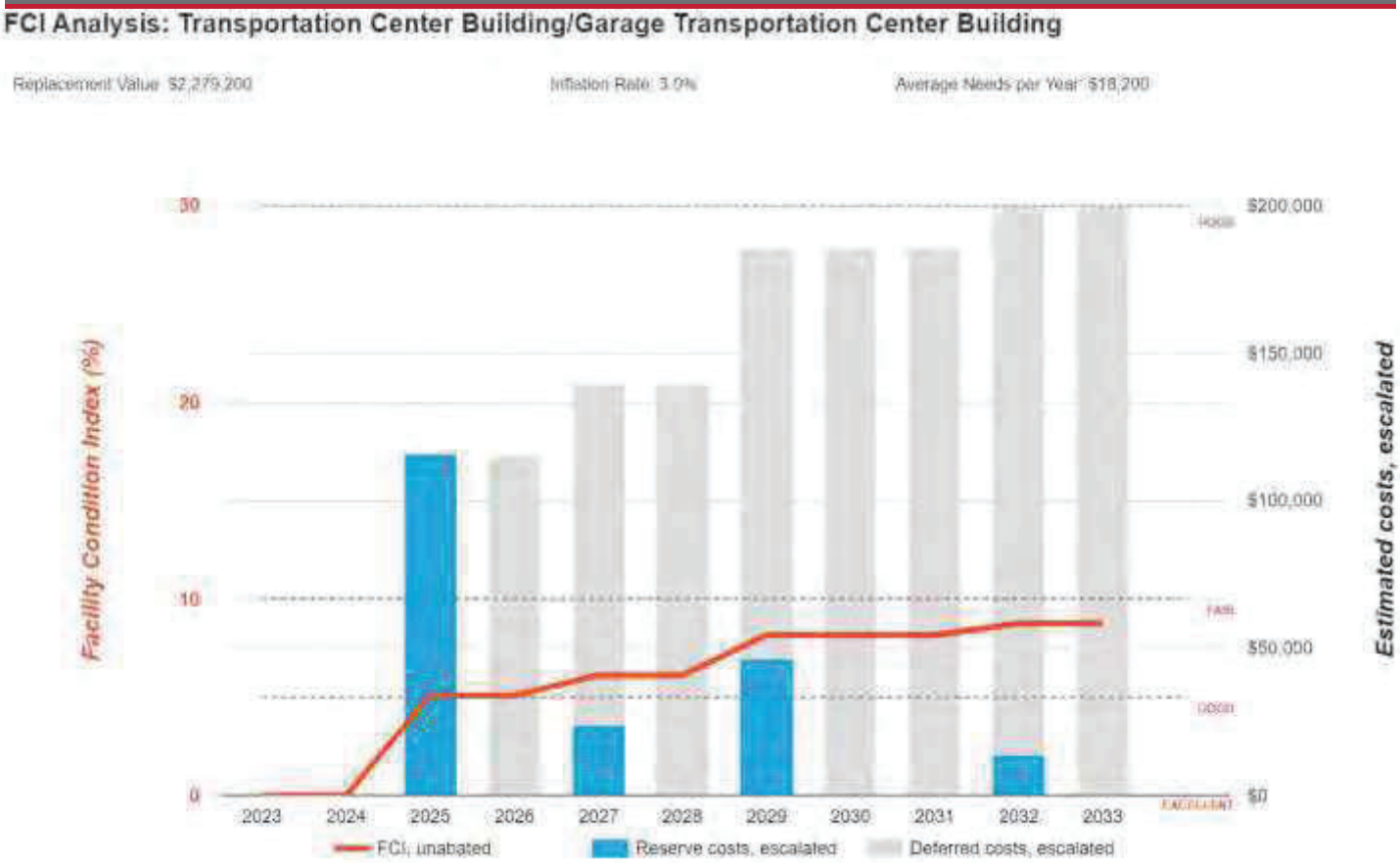
Transportation Center Building: Systems Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Facade	-	$10,900	-	-	$46,000	$56,900
Roofing	-	$104,800	-	-	-	$104,800
Interiors	-	-	-	$50,700	$94,900	$145,600
Plumbing	-	-	-	$1,600	$54,600	$56,100
HVAC	-	-	$23,800	-	$39,000	$62,800
Electrical	-	-	-	-	$188,700	$188,700
Equipment & Furnishings	-	-	-	$7,800	$15,400	$23,200
Site Utilities	-	-	-	-	$1,200	$1,200
TOTALS (3% inflation)	**-**	**$115,700**	**$23,800**	**$60,100**	**$439,800**	**$639,400**

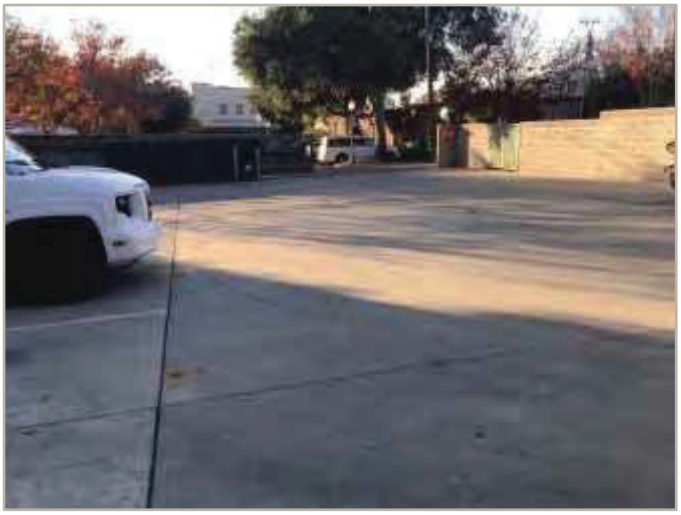
*Totals have been rounded to the nearest $100.

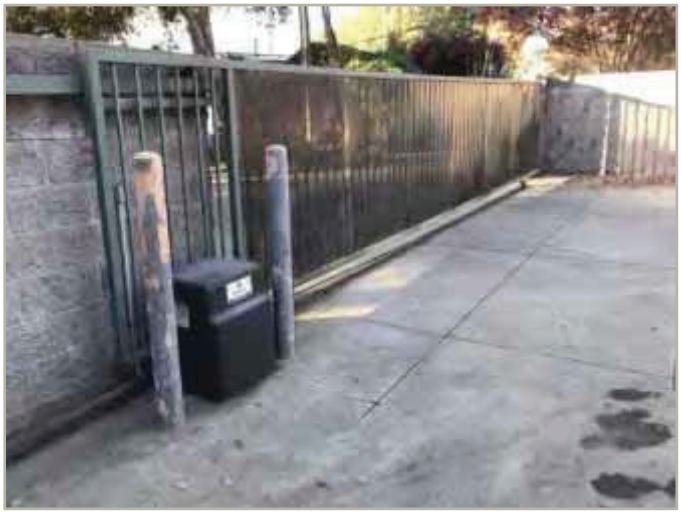
The orange line in the graph below forecasts what would happen to the FCI (left axis) over time, assuming zero capital expenditures. The capital expenditures for each year (blue bars) are associated with the dollar amounts along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



4. Site Summary





Site Information		
Lot Size	0.40 acres (estimated)	
Parking Spaces	Twelve total spaces all in open lots; one of which is accessible	
System	*Description*	*Condition*
Pavement/Flatwork	Asphalt and concrete lots with concrete sidewalks and curbs	Fair
Site Development	Property entrance signage; CMU wall and metal tube fencing	Fair
Landscaping and Topography	Limited landscaping features Irrigation present Low to moderate site slopes throughout	Fair
Utilities	Municipal water and sewer Local utility-provided electric and natural gas	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED, HPS	Fair
Ancillary Structures	None	--
Accessibility	Presently it does not appear an accessibility study is needed for the exterior site areas. See Appendix C.	
Key Issues and Findings	No key issues observed	

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
Fire Alarm & Electronic Systems	-	-	-	$17,500	-	$17,500
Site Pavement	-	-	$1,200	$1,400	$15,600	$18,200
Site Development	-	-	-	-	$31,100	$31,100
Site Utilities	-	-	-	-	$16,500	$16,500
TOTALS (3% inflation)	**-**	**-**	**$1,200**	**$18,800**	**$63,200**	**$83,200**

*Totals have been rounded to the nearest $100.

5. 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.

6. 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 1995. The facility has not since been substantially renovated.

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

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

7. 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.

8. 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.

9. Energy Audit

The purpose of this Energy Audit is to provide Transportation Center Building/Garage 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

10. 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, one gas 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 gas meters observed	One
Number of domestic water meter observed	One

Average Utility Rates		
Electricity	Natural Gas	Water and 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.

Natural Gas

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 natural gas 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.

11. Energy Conservation Measures

Bureau Veritas has conducted an Energy Audit on Transportation Center Building/Garage. 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 four 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	$18,717 *(In Current Dollars)*
Estimated Annual Cost Savings Related to ECMs	$6,120 *(In Current Dollars)*
Net Effective ECM Payback	3.06 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 four Energy Conservation Measures (ECMs) for this property.

List of Recommended Energy Conservation Measures For Transportation Center Building/Garage

		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)
						(a)	(b)	C=(a-b)	Natural Gas	Electricity	Demand Reduction	Water									
				($)	($)	($)	($)	($)	(Therms)	(kWh)	(KW)	(kGal)	(Mmbtu)	($MtCO_2$/Yr)	($)	($)	($)	(Yrs.)		($)	(Yrs.)
1	Title:	Install Low Flow Faucet Aerators	Location: Transportation Center Building	$23	$24	$47	$0	$47	20	0	0	4	2	0.10	$44	$0	$93	0.51	16.78	$742	10.00
	Attribute:	Replace 1x 2.2GPM rated kitchen aerators with 1GPM WaterSense certified aerators Replace 2x 2.2 GPM rated bathroom aerators with 0.5GPM WaterSense certified aerators																			
2	Title:	Upgrade Building Lighting to LED and Install Automatic Lighting Controls	Location: Building Interior and Exterior - Transportation Center Building/Garage	$1,189	$1,619	$2,808	$0	$2,808	0	8,502	0	0	29	1.91	$2,537	$232	$2,769	1.01	11.77	$30,247	15.00
	Attribute:	Replace CFL (802.72x) ;HID (4x) ;Linear Fluorescent (30x) ;																			
3	Title:	Install Low Flow Tankless Restroom Fixtures	Location: Restrooms	$229	$160	$389	$0	$389	0	0	0	11	0	0.00	$0	$0	$125	3.11	3.84	$1,103	15.00
	Attribute:	Retrofit 2x; 1.6 GPF toilets with dual-flush flush vales																			
4	Title:	Upgrade Split Heating and Cooling System	Location: Transportation Center Building	$1,955	$11,077	$13,031	$0	$13,031	184	11,397	6	0	57	3.54	$3,813	$0	$3,813	3.42	4.02	$39,414	18.00
	Attribute:	Replace (1x) 30MBH Heating System With 80% AFUE Gas Fired -34MBH System; (1x) 30000Btuh R-22 Split System With 14EER Rated 30000Btuh System; (1x) 48MBH Heating System With 92% AFUE Gas Fired -45MBH System; (1x) 48000Btuh R-22 Split System With 14EER Rated 48000Btuh System;																			
		Totals for No/Low Cost Items		**$252**	**$184**	**$436**	**$0**	**$436**	**20**	**0**	**0**	**0**	**16**	**0.10**	**$44**	**$0**	**$218**	**2.00**			
		Total For Capital Cost		**$3,144**	**$12,696**	**$15,840**	**$0**	**$15,840**	**184**	**19,899**	**6**	**6**	**0**	**5.45**	**$6,350**	**$232**	**$6,582**	**2.41**			
		Interactive Savings Discount @ 10%							-20	-1,990	-1	-1	-2	-0.56	-$639	-$23	-$680				
		Total Contingency Expenses @ 15%				$2,441		$2,441													
Total for Improvements						**$18,717**	**$0**	**$18,717**	**183**	**17,909**	**6**	**6**	**14**	**5.00**	**$5,755**	**$209**	**$6,120**	**3.06**			

12. 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

- ✓ Pilot 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 cooling 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 'aero-seal'
- ✓ 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

13. Certification

The City of Glendora (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Transportation Center Building/Garage, 410 East Dalton Avenue, Glendora, California 91741, 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.

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14. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan
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

Appendix B:
Site Plan

Appendix C:
Pre-Survey Questionnaire

CLIENT DELIVERY, PLEASE INSERT

PRE-SURVEY QUESTIONNAIRE

Appendix D:
Accessibility Review and Photos

CLIENT DELIVERY, PLEASE INSERT
ADA CHECKLISTS/MATRICES AS UPLOADED TO P: DRIVE

Appendix E:
Component Condition Report

CLIENT DELIVERY, PLEASE INSERT
COMPONENT CONDITION REPORT

Appendix F:
Replacement Reserves

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REPLACEMENT RESERVES

Appendix G:
Equipment Inventory List

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EQUIPMENT INVENTORY LIST

EQUIPMENT INVENTORY LIST (CLIENT DELIVERY INSTRUCTIONS)

322 & 354 SERVICE CODES: run this report from AssetCALC and include
017 SERVICE CODES: delete this appendix

Appendix H:
Energy Conservation Measures Calculations

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ECM WORKSHEETS HERE

Appendix I:
Lighting System Schedule

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LIGHTING SYSTEM SCHEDULE

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) Investment 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).

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Executive Summary Examples:

Example 1 (various):

Historical Summary

(STRAIGHTFORWARD EXAMPLE): The high school campus was originally constructed in 1977 and the gymnasium building was added in 2006. The original buildings were completely renovated at the time of the gymnasium construction.

Architectural

(STRAIGHTFORWARD EXAMPLE): The original buildings were completely renovated at the time of the gymnasium construction, including the exterior and interior finishes, as well as complete roof and window replacement. For all the buildings, only typical lifecycle interior finish, exterior finish, and roof membrane replacements are budgeted and anticipated.

(SLIGHTLY MORE ROBUST EXAMPLE): The three-story office building was constructed in 1987. The stucco façade was refinished in 2012 while the windows, storefront glazing, and roof are original. The roof membrane shows signs of significant wear, with evidence of leakage throughout the top floor, and requires replacement. The interior finishes have been regularly replaced during tenant change-overs and are generally the responsibility of the tenants. The lobby finishes are dated and budgeted for replacement.

The neighboring fire station was recently constructed in 2008. Only typical lifecycle interior finish, exterior finish, and roof membrane replacements are budgeted and anticipated.

Mechanical, Electrical, Plumbing & Fire (MEPF)

(STRAIGHTFORWARD EXAMPLE): Most MEPF systems and components are original to the 1999 campus construction and have been well-maintained since that time. Some HVAC and plumbing components such as pump motors and terminal units have required isolated replacements and are nearing the end of their anticipated lifecycles. The MEPF infrastructure itself is generally in good working condition with no major expenditures anticipated in the short term.

(COMPLICATED/HISTORICAL EXAMPLE): The original portion of the campus was supplied by steam generated from a dedicated central plant in the early 1960's. That plant was abandoned in 1992 when most HVAC systems were converted over to packaged rooftop units, with much-needed cooling capability provided. These RTU's are reportedly still functioning well but are nearing the end of their lifecycle. The newer buildings, Washington Hall (1997) and Jefferson Hall (1999), are served by local boiler and chiller plants feeding air handlers and VAV's. Major component replacements for those buildings are budgeted in the long term.

Although the HVAC systems of the older buildings were renovated in 1992 (per above), the rest of the MEPF infrastructure in those buildings has not; the electrical and (galvanized iron) plumbing systems are original and in dire need of replacement. In addition, these buildings lack fire suppression systems, and although each building is likely 'grandfathered' a full fire sprinkler system retrofit for each is highly recommended.

Site

(GENERALLY KEEP SITE SIMPLE): The parking lots and sidewalks have been periodically repaved and sectionally replaced as-needed over the years. The west parking lot has developed numerous potholes and heavy surface wear and should be milled and overlaid. The playgrounds and sport courts are generally in good condition.

Example 2 (portfolio: credit unions… VERY THOROUGH & ROBUST):

Historical Summary: The credit union facilities consist of a combination of single-story and multi-story branches and administrative offices. The facilities were constructed between 1960 and 2014. The majority of the older facilities have undergone partial or complete renovations since construction or acquisition.

Architectural: Almost all facilities consist of wood frame construction on concrete slabs with integral footings. In general, the structures appear to be sound, with no significant areas of settlement or structural-related deficiencies observed. Evidence of structural settlement was observed at the Redmond branch, which is potentially related to fuel-contaminated soil. The exterior envelope systems and components were observed to be performing adequately at the majority of the small-branch sites. Issues with the building envelope, such as roof leaks, wall leaks, failed glazing seals, deteriorated weatherstripping, and other deficiencies, were primarily observed at the older multi-story facilities. Additional studies as well as budgetary costs for repairs have been provided to address these issues. Interior finishes vary in age, and have been well maintained throughout the facilities. Finishes have been replaced as needed, and are anticipated for lifecycle replacement based on useful life and normal wear.

MEPF: The HVAC equipment varies in age throughout the sites. Individual systems, such as split-system furnaces and condensing units, as well as rooftop packaged units, are replaced as needed. The older, multi-story facilities mainly consist of central systems with water-source heat pumps or VAV units. These systems are generally older and are comprised of original equipment or components that are exceedingly aged. Climate control within both the smaller branch banks and larger branch/office buildings is reported to be oftentimes challenging. HVAC renovations, which include upgrade of antiquated and/or undersized equipment, are recommended for a significant portion of the facilities to improve comfort within the interior spaces.

In general, the plumbing systems are adequate to serve the facilities, with equipment and fixtures updated as needed. The domestic water service within the downtown facility is antiquated, with evidence of leaks observed at the domestic piping. The domestic hot water service at the downtown facility consists of original equipment and is inadequate. Lifecycle replacement of original domestic water and sanitary sewer systems is anticipated within the older facilities.

Electrical service equipment and systems are original for the majority of the facilities and are anticipated for lifecycle replacement within the older facilities. Interior lighting consists mainly of T-8 linear fluorescent and CFL fixtures and lamps, with LED upgrades in some areas.

The majority of the facilities are protected by a hard-wired fire alarm system. These systems vary in age, and some facilities lack strobes, pull stations, illuminated exit signs, emergency lighting, and other modern life safety devices. The fire alarm systems at Edmonds, Mukilteo, Everett, and Kent are very limited or nonexistent. Building wide fire suppression (sprinkler) systems were observed within the multi-story facilities only. Fire suppression is provided to the small branch banks by fire extinguishers and on-site fire hydrants. It is recommended that the bank branch buildings be retrofit with sprinkler systems for life-safety system modernization. The elevator machinery and controls within the Pacific Avenue and Downtown buildings are original to construction and should be considered for modernization in the near future.

Site: In general, the sites have been well maintained. The majority of the sites contain moderate to heavy landscaping, which are served by in-ground irrigation systems. The asphalt paved parking areas and drive aisles are well maintained as a result of frequent sealing and striping. A significant portion of the site lighting has been upgraded to LED, and it is recommended that the remaining lighting is upgraded to improve energy efficiency. A section of sanitary sewer line at Bothell is problematic and requires an additional study and repairs. An additional study and repairs are also required at the Edmonds branch related to the soil contamination and associated building settlement.

Recommended Additional Studies: 10 - Downtown: The POC identified locations of active wall leaks throughout the interior spaces. These leaks appear to be related to moisture penetration at the exterior concrete walls. Additionally, there is an active roof leak within the 1st floor executive conference room, which appears to be related to issues with the built-in gutter system. A professional consultant must be retained to analyze the existing condition, provide recommendations and, if necessary, estimate the scope and cost of any required repairs. The cost of this study is included in the cost tables. A budgetary cost allowance for associated repairs is also included.

14 - Edmonds: According to Point of Contact, there has been an issue with fuel oil contamination in the soil on the property due to a previous gas station or bus barn. There has been litigation and oil sampling which is due to expire. Currently there are two soil sample hole patches that have failed and are lifting due to possible soil water saturation. There is also a foundation settlement issue which is potentially related to the fuel-saturated soil. A professional consultant must be retained to analyze the existing condition, provide recommendations and, if necessary, estimate the scope and cost of any required repairs. The cost of this study is included in the cost tables. A budgetary cost allowance for associated repairs is also included.

Some areas of the facility were identified as having major or moderate accessibility issues. Bureau Veritas recommends a study be performed to take measurements, provide additional itemized details, research local requirements, and, if necessary, estimate the scope and cost of any required improvements. The cost of this study is included in the cost tables. Due to the lack of measurements and itemized findings at this point in time, the costs for any possible subsequent repairs or improvements are not currently included

Example 3 (campus: country club):

Historical Summary: The facility was original constructed in 1948 and was renovated in 2007. The fitness center was constructed in 2007 during the renovation of the original buildings and site.

Architectural: The buildings consist of wood framed construction on concrete slabs. The majority of the interior and exterior building components were replaced during the 2007 renovation. Renovations to the clubhouse kitchen and dining areas were performed in 2015. The exterior enclosures consist of painted wood siding, aluminum windows and main entry doors, and steel service doors. Roofs primarily consists of hip asphalt shingle assemblies, with flat modified bitumen and single-ply roofs at mechanical well locations. Standing water and deteriorated plywood siding were observed at the upper mechanical well roof of the Fitness Center. The majority of the interior finishes and fixtures were replaced in 2007 and are anticipated for lifecycle replacement. Renovation of the locker room interiors is anticipated for spring of 2019.

MEPF: The majority of the MEPF systems and components are original to the 2007 renovation and construction. Heating and cooling are provided by rooftop packaged units and split system furnaces and condensing units. There is an unsupported natural gas line at the packaged unit located at the upper mechanical well roof of the Fitness Center. Domestic hot water is provided by local domestic water heaters, a portion of which have been replaced since construction. A main switchboard located within the Pool Pump House distributes power to local main distribution panels located in each building. Buildings are protected by both fire alarm and fire sprinkler systems. Lifecycle replacement of the majority of the MEPF and pool equipment is anticipated.

Site: The site consists of both paved and unpaved parking areas. The asphalt paved parking lots and driveways have areas of surface cracking and heavy weathering throughout. The asphalt sidewalks are heavily deteriorated, with significant areas of cracking and uneven pavement. The majority of the site lighting consists of energy inefficient metal halide and high-pressure sodium fixtures and lamps. Isolated areas of the concrete pool decking are cracked and spalled. The mortar joints at the pool copings are deteriorated and separating. The concrete bleachers at Pool 1 are heavily deteriorated.

Example 4 (campus: country club):

Historical Summary: The Old House was originally a farmhouse built in 1936 and the facility was converted to a country club with a golf course when the Main Clubhouse was constructed in 1956. The golf and tennis pro shops were erected during the 1970's and the fitness center and maintenance building were recently added in 2001 during a significant renovation of the entire facility.

Architectural: Short term recommendations include replacement of the original antiquated windows at the Old House and replacements of the aged and leaky roofs at the Old House as well as the tennis and golf pro shops. In the basement of the Main Clubhouse, there are water intrusion issues and associated rusting of steel joists and metal decking that need to be further investigated and addressed. The warped and dry-rotted wood window and door trim of the Main Clubhouse should also be replaced. For all the buildings, typical lifecycle replacements of the interior and exterior finishes are budgeted and anticipated.

MEPF: The MEPF systems and infrastructure vary significantly in age; while some components were replaced and upgraded during the 2001 renovations, many remain older, with some still original to the construction dates of each building. Most boilers, furnaces, rooftop units, and split systems are dated 1990 and newer, but many air handlers are older and are in need of refurbishment or replacement. Most piping is original, and the 1970 galvanized iron found in the Golf Pro Shop is particularly concerning and recommended for replacement. The facility's electrical infrastructure is considered somewhat aged but still functional, with the most significant shortcoming being the lack of emergency power. Since management reports occasional outages, installation of an emergency generator is recommended. With the exception of the Main Clubhouse and Fitness Center, all other buildings would benefit from a refresh of the fire alarm systems in addition to fire suppression system retrofits (currently lacking).

Site: As an active country club facility renovated in 2001, most of the pavement and site features range from good to fair condition, generally correlating with age. There are limited areas of paving exhibiting extensive cracking, with the worst areas in the service yard, within the dumpster area, and along some of the concrete golf course paths. The chain link fencing throughout the golf course has numerous failing sections. In terms of accessibility upgrades, the site stairs and ramp serving the Main Clubhouse appear to require an update to achieve compliance.

Example 5 (campus: senior residential… VERY THOROUGH & ROBUST):

Historical Summary: The site was developed as a senior residential community around 1963. Three of the original casita buildings remain from the original development. In the 2000's a major improvement project was initiated, during which the large multi-resident buildings were constructed, including the 1000, 5000 and 6000 independent living buildings, the 7000 assisted living building, and the 8000 skilled nursing building. The other large multi-resident building, 3000, was built circa the 1990's. Improvements to the clubhouse/administration buildings and the Pavilion were also undertaken in the 2000's. The Yoshi Center is the newest building, dating from 2013. This historical information was obtained from the Maricopa County Assessor's records and from historical aerial photographs in addition to information provided by property management.

Architectural: As the majority of the buildings are fifteen years old or newer, few components in these buildings have required replacement. Excellent maintenance practices have kept the buildings in good condition, but some components are beginning to show wear and are approaching the end of their expected lifespan. The older buildings have been well maintained, with components and finishes replaced regularly as needed. Roofs on the older and newer buildings have been recoated with a reflective foam coating within recent years except for 5000 and 6000; on 6000, the cap sheet is wearing, and roof coating will be required in the short term. Most exterior and interior finishes are in better condition than would be expected for their ages. The windows on the 3000 building are older aluminum-clad wood and are separating, binding, and hard to close; some have been replaced, but the rest will require replacement in the short term. No other significant problems were observed. Typical lifecycle based interior and exterior finish replacements are budgeted and anticipated. The cost tables include common area building items only; finishes and building components within resident rooms, and site improvements other than the pool, were excluded from this assessment.

MEPF: The HVAC systems generally consist of rooftop package units or split systems, with auxiliary systems that include ductless split systems, rooftop exhaust fans, and evaporative coolers. The 8000 building has a central cooling system with two rooftop chillers. The chillers were included in this assessment, and were reported to have had some pipe leaks, as well as having had the system controls and two circulating pumps replaced. The other HVAC equipment was not evaluated during this assessment.

The electrical systems in the older buildings were replaced in the early 2000's, as evidenced by manufacture dates on the electrical panels, and the building electrical systems appeared to be overall in fair condition. Although most of the elevators are not excessively aged, they reportedly require weekly service calls. Bureau Veritas recommends an elevator consultant be retained to evaluate the elevators to determine the source of problems and recommend further repairs or replacement. The elevator cab finishes appear to be generally in fair condition, except that the interior cab panels in the 7000 building elevators are scratched.

Plumbing systems generally consist of copper supply piping and cast iron waste pipe. The 3000 building reportedly has PVC/ABS piping. Both electric and natural gas water heaters are present, and most water heaters had a manufacture date of 2011 or later. The casita buildings reportedly have galvanized water supply piping and cast iron waste piping, and there are some problems with leaking supply pipes and clogged drain lines. Due to the age and condition of the plumbing systems in these older buildings, replacement is recommended. No other major issues were observed or reported.

The fire alarm and suppression systems appear to be in fair condition. Inspection tags are current. Typical lifecycle replacements and ongoing maintenance will be required.

Site: Site maintenance appears to be excellent, and site improvements and landscaping are generally in good condition. Sidewalks are free of cracks and heaving, and asphalt pavement has been regularly maintained with seal coating and striping, with only a few areas of significant cracking in the main parking lot. The swimming pool however is about 25 years old and is deteriorating, with persistent problems of crumbling plaster, and replacement is recommended.