

# FACILITY CONDITION ASSESSMENT

Lake Oswego School District

May 2021



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**Lake Oswego**  
**School District**



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# EXECUTIVE SUMMARY

## PROJECT INTENT

The purpose of this facility condition assessment report is to provide Lake Oswego School District (LOSD) with an evaluation of the existing condition and recommended remediation for 17 district-owned facilities.

The original assessment consisted of a multi-disciplinary on-site inspection of the existing buildings focusing on architectural, structural, mechanical, electrical and plumbing systems. The specific items for evaluation included the following:

- **Building Exterior:** walls, foundation, doors, windows, soffits
- **Building Interior:** partition walls, floors, ceilings, doors, windows, casework
- **Roof:** roofing system, drains, downspouts, scuppers, crickets, cap flashing
- **Seismic Lateral Systems:** modified ASCE 41-13 Tier 1 Checklist-based Evaluation
- **Mechanical, electrical, plumbing, systems:** HVAC equipment, plumbing fixtures, electrical equipment

This document is an update of the 2015 facility condition assessment report originally prepared by Oh planning+design, architecture, KPFF Engineering, CBRE|Heery, The Facade Group, ACC Cost Consultants, and Terracon. The process of this update included a review of the original recommendations lists for each of the District sites with District maintenance and administrative staff to determine items that have been addressed or add items that have been identified since the previous issue of this document. The updated information was shared with a cost estimating consultant, Rider Levett Bucknall, for providing a current construction cost for each of the recommendations.

An update to the FCA was developed in June 2020, for inclusion into the Long-Range Facility Plan. Further updates were made in April, 2021 to account for the construction work being done to Forest Hills, Lake Grove, and both High Schools in the summer of 2021. The following is an assessment of facility needs accurate through summer 2021.

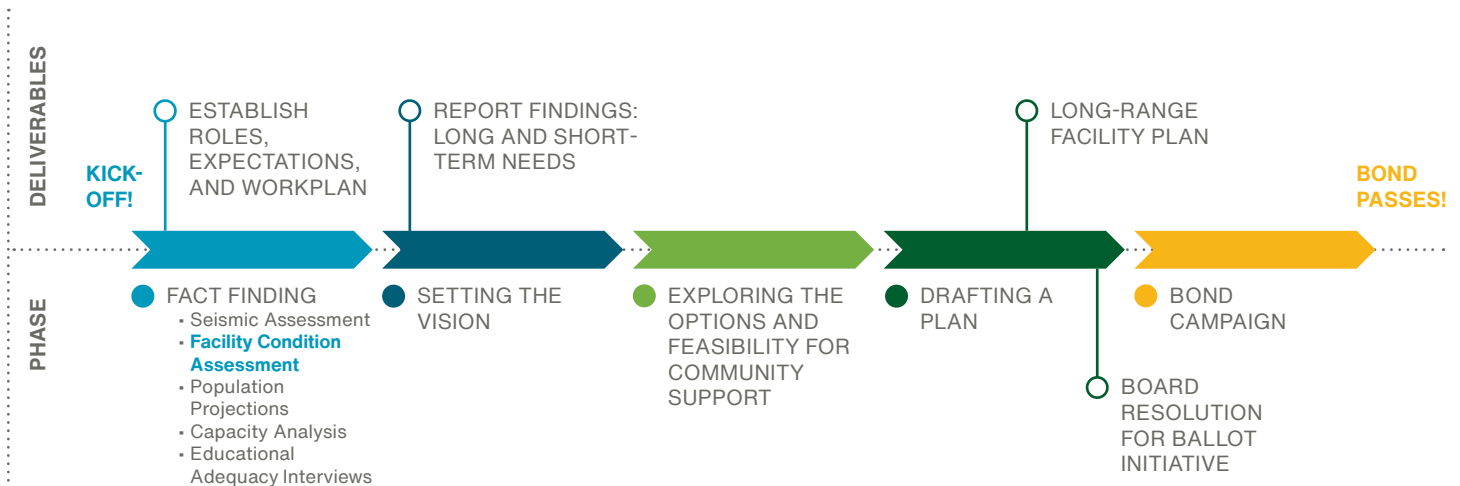


## FACILITY CONDITION ASSESSMENT

The Facilities Condition Assessment (FCA) is one step in the Long-Range facility planning process for LOSD.

The planning process begins with a fact finding mission in which consulting planners, engineers, and architects provide the District with assessments to help them understand the current state of each facility. The Facility Condition Assessment (FCA) is a rapid visual assessment of buildings that provides costs and condition index numbers that can be used to set priorities for future repairs. This fact-finding exercise, along with the Long-Range facility plan, provides the school district and school board with the information needed to develop a plan for a possible capital improvement bond. The graphic below depicts the complexity and multiple steps of this process.

### KEY MILESTONES OF THE PLANNING PROCESS



The FCA is based on the physical inspection of building conditions, combined with the review of the existing building documentation and the school district's maintenance records. On-site observations include the review of the building components' age, design, construction methods and material adequacy. District-provided documents are surveyed to understand the building's construction. Existing conditions are confirmed on-site through visual observation. The FCA report compiles the visual assessment data, recommendations from client meetings and source documents to identify deficiencies. A cost estimate of the remediation of deficiencies is then prepared. The graphic below illustrates the steps in the FCA process.

An FCA is the baseline to further planning efforts. A high-level assortment of conditions of the building(s) is used to determine the recommendation for facility repair or replacement. An FCA is a cost — and time-efficient method providing an overview of general conditions. Some tasks are not specifically included within the FCA process.

## FCA LIMITATION AND EXCLUSIONS

- Validating as-built conditions
- Hazardous material assessment
- Destructive testing
- Site Improvements (repairs and site replacement)
- Concealed Systems: below grade, within walls or roofing systems
- Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible.
- Measurement of load (current) or temperature of any electrical equipment
- Functionality and performance of the HVAC equipment (pumps, fans, boilers, etc)
- Fire life safety components associated with building systems such as dampers, occupancy, fire rating of systems, etc.
- Complete ASCE 41-13 Tier I Evaluation
- Contingencies, inflation, general conditions, permits and design fees
- Exhaustive ADA analysis of building with regard to each building's compliance with current codes. Update of building accessibility is not required by code unless modifications or renovations are planned.

## FACILITY CONDITION ASSESSMENT PROCESS



## FACILITY CONDITION INDEX (FCI)

Within the FCA is the Facility Condition Index (FCI) which is calculated based on the deficiencies found in each building and the corresponding cost to address them. Specifically, the FCI is the ratio of the estimated cost of renovations to the cost of replacing the entire school with the current square footage and features. The closer the renovation costs are to the full replacement cost of the building, the higher the FCI score. According to this methodology, the FCI will help determine if it is more cost-effective to entirely rebuild or to renovate a facility or school.

### FACILITY CONDITION INDEX



$FCI = \text{Repair Cost (excluding site work)} / \text{Replacement Cost (excluding site work)}$

For example:

- Repair Cost \$2,000/Replacement Cost \$20,000 = FCI of .10 | Recommend Repair
- Repair Cost \$17,000/Replacement Cost \$20,000 = FCI of .85 | Recommend Replace

An FCI over .50 is the point where the cost to repair is half of the building replacement value. A .50 FCI number indicates a critical point at which replacement rather than repair may be considered a better investment value.

The FCI provides a general indicator of a building's condition and is a benchmark used to compare the relative condition to other buildings. This does not consider the classroom configuration for current learning and teaching styles. The FCI does not include upgrades or improvements to program needs.

Additional considerations such as growth and capacity needs, and the needs of educational programs are provided by other reports in the fact-finding stage and included in the 2020 Long-Range Facility Plan.

## FCA CLARIFICATIONS

This assessment report is completed on a facility conditions basis established during the visual investigation and documentation review. In some cases, not all surfaces and areas can be easily assessed. A building component's condition may not be conclusive without further investigation; which will be stated within this report.

Site evaluation forms, electronic field documents and structural evaluation forms have been prepared for all 17 sites in the Lake Oswego School District and are on file as needed.

### BASIS OF FACILITY CONDITION ASSESSMENT

#### Architectural Evaluation

- Review of the existing architectural building drawings.
- The visual appearance and age of a finish, material, fixture, or piece of equipment is the main cue to determine its current condition.
- If a material is warped, rotten, discolored, deformed, or deteriorated then the material is considered in poor condition.
- If 75% of a surface is showing signs of deterioration, then the entire surface is considered in poor condition.
- If a building component lacks the ability to last 5 more years, then the building component is considered deficient.
- If a finish is showing wear and tear from normal use over an extended time, then the finish is considered in poor condition.
- If a surface is showing signs of damage and not located within the range of human activity, then it is assumed that there are other factors leading to its rapid deterioration such as water, air leaks, or other weathering which indicates the need for further investigations.
- The age of certain roofs for some buildings constructed prior to 1980 is not available. Unless otherwise noted, this report assumes roof replacement for all roofs. Detailed roof assessment is required to determine age and remaining life of materials. Foundation of roofing material replacement judgment is based on anticipated roof life of less than 5 years — assuming regular maintenance. Roof level seismic upgrade is typically recommended at all buildings.
- Roof replacements at many sites are due to the seismic upgrades to meet current ASCE 41-13 standards at roof level. These sites are noted in the architectural roof section of the cost estimate at each site as applicable.

**Structural/Seismic Evaluation**

- Major structural components for each building were assessed using the current seismic evaluation standard which is ASCE 41-13, Seismic Evaluation and Retrofit of Existing Buildings.
- This evaluation includes reviewing the existing building drawings and a site assessment of visible structural elements.
- Seismic evaluations are based on a modified ASCE 41-13 Tier 1 evaluation process and should not be considered full Tier 1 evaluation. All buildings were assessed to a Life Safety Performance Level, except separate gymnasium buildings or gymnasium wings which were assessed to an Immediate Occupancy Performance Level to act as an emergency operations or recovery center.
- Tier 1 checklists were used as a guide for this assessment phase. Computational Tier 1 checklist items were not completed during this assessment phase.
  - » For example, the force of the building is not computed to determine the actual shear force on each shear wall, but experiential-based judgments were made to determine if shear walls were a likely deficiency.
- Each different building type (wood shear wall vs. concrete shear wall for example) has an individualized Tier 1 checklist which is based on common deficiencies of that building type.
- A FEMA 154 Rapid Visual Screening (RVS) is performed. These RVS scores were compared to both the DOGAMI (Oregon Department of Geology and Minerals Industries) 2006 RVS scores and the Froelich Consulting Engineers (FCE) 2008 RVS scores. The detailed comparison is documented in a memo dated 9/25/2015 and is included in the Appendix section in this report.
- A list of seismic structural deficiencies is determined for each different building and is included within the report.
- For buildings being considered for seismic rehabilitation, a comprehensive ASCE 41-13 Tier 1 or Tier 2 evaluation is recommended.
- The structural evaluations included in this updated facility assessment were completed in 2015. The structural evaluation comments still apply as of the date of this updated document.



**Mechanical/Electrical/Plumbing Evaluations**

- ASHRAE Applications Handbook is used to determine the anticipated life of equipment, but not solely used to determine if a piece of equipment should be replaced.
- Recommended replacement is determined based on the actual condition of the equipment, how well it appears to have been maintained, and how well it could function if proper maintenance is provided.
- Many systems, such as built up air handling units, can operate for 60 years or more if properly maintained and components replaced as necessary.
- For existing buildings, full coverage of fire protection sprinklers is not a code requirement to bring the building up to the current code. Full coverage would be required in any new facility under the current code.
- Inefficient light fixtures, such as incandescent type, are typically noted to be replaced due to their inefficiency.
- Repair and/or replacement of electrical equipment and devices is also recommended if physical damage is observed and/or the current installation represents a violation of the National Electric Code (such as the location of receptacles within 6' of a sink without GFCI protection).
- Although in some instances, improvements are recommended such as the addition of light fixtures, for the most part the focus is on replacement issues only and not recommended upgrades.
- If a significant amount of time passes prior to any renovations occurring, many of the items noted as having 5 year or less life expectancy should be revisited and evaluated for replacement at that time.
- Replacement of some equipment, such as old boilers, will most likely require asbestos abatement. Identifying or quantifying asbestos is not within our realm of expertise.
- Only visual inspection of equipment was made. Functionality of equipment is assumed or determined by discussions with Lake Oswego School District staff and with building user group representatives.

### Pool Specialties Evaluations

- The pool and pool equipment were evaluated based on current regulatory agency requirements (e.g. OAR, VGB, ADA, NFHS, USA Swimming, etc.) along with industry standards.
- Although many older facilities are allowed to be grandfathered in for certain code sections, it is important to understand the current requirements and how they affect repairs and renovations.
- Typically, large renovations to the pool shell or pool equipment require that the entire pool and pool systems be brought up to current standards.
- Recommended replacement is determined based on the actual condition of the equipment, how well it appeared to have been maintained, and how well it could function if proper maintenance is provided.
- Consideration will be given to the manufacturer's warranty period and the remaining life expectancy when providing repair and/or replacement recommendations.
- A full replacement Swimming Pool facility was in the design phase during the writing of this report. The summary of findings included in this report do not reflect the future new facility.



## CURRENT AND PROJECTED PROJECTS

Since the issuance of the original 2015 facility condition assessment, improvements were made possible by the successful passage of the 2017 construction bond totaling \$187 million. Completed bond projects that have addressed, or planned project projected to address recommendations from the 2015 assessment include work at Forest Hills Elementary School, Hallinan Elementary School, Lake Grove Elementary School, Oak Creek Elementary School, River Grove Elementary School, Westridge Elementary School, Lake Oswego Junior High School, Lake Oswego High School, Lakeridge High School, Palisades Elementary School, Uplands Elementary School, and the Pool Building. Lakeridge Middle School is being rebuilt in its entirety. The bond also included safety and security improvements as well as technology infrastructure improvements. The District is also planning a replacement pool facility. Additionally, replacement of Lake Oswego Junior High School, River Grove Elementary School, and the Bus Barn has been considered.

Oak Creek Elementary School rendering



## FACILITY OVERVIEW

The following is a matrix of all 17 sites documenting the existing systems and building facts combining the District-provided documentation and visual observations.

	TOTAL BUILDING AREA (SF)	TOTAL ROOF AREA (SF)	NO. OF STORIES	YEAR BUILT	RENOVATION (YEAR)	PRIMARY STRUCTURE	ROOF TYPE	PRIMARY MECHANICAL	PRIMARY MECHANICAL LIFECYCLE	ELECTRICAL CAPACITY	ELECTRICAL LIFECYCLE	GENERATOR	GENERATOR LIFECYCLE	FCI
FACILITY INFORMATION	BUILDING INFORMATION													
<b>FOREST HILLS</b> 1133 Andrews Road, Lake Oswego, OR 97034	50,695	55,080	1	1946	1990 2004 2013	W2	R2, R4 R6	M2	26	120/208V 1600A	50	12.5 KVA	25	0.12
<b>HALLINAN</b> 16800 Hawthorne Drive Lake Oswego, OR 97034	46,712	51,208	1	1980	2020	W2	R4, R7	M4	20	120/208V 1200A	50	N/A	N/A	0.05
<b>LAKE GROVE</b> 15777 Boones Ferry Road Lake Oswego, OR 97034	61,652	66,129	1	1949	1990	W2	R2	M5	26	120/208V 1600A	50	N/A	N/A	0.09
<b>OAK CREEK</b> 55 Kingsgate Road Lake Oswego, OR 97035	68,040	42,926	2	1991	2020	W2	R3	M8	20	277/480V 800A	50	25 KVA	25	0.02
<b>RIVER GROVE</b> 5850 McEwan Road Lake Oswego, OR 97035	50,484	55,905	1	1968	1990 2020	W2, RM1	R4, R5	M7	30	120/208V 1600A	50	N/A	N/A	0.24
<b>WESTRIDGE</b> 3400 Royce Way Lake Oswego, OR 97034	48,215	53,103	1	1980	2020	W2	R4, R6	M8	20	120/208V 1200A	50	N/A	N/A	0.07
<b>LAKE OSWEGO JR. HIGH</b> 2500 Country Club Road Lake Oswego, OR 97034	106,093	135,082	1	1957	1990 2013 2020	W2	R5, R6	M2	26	120/208V 1520A	50	N/A	N/A	0.30
<b>LAKE RIDGE MIDDLE</b> 4700 Jean Road Lake Oswego, OR 97035	122,610	137,242	1	2020	N/A	RM1	R5	M7	30	277/480V 800A	50	62.5 KVA	25	N/A
<b>LAKE OSWEGO HIGH OLD GYM</b> 2501 Country Club Road Lake Oswego, OR 97034	259,682	172,654	3	2005 1961	2010 2004	S1, S2, RM1	R4, R5	M4	20	277/480V 3000A	50	190 KVA	25	0.06
<b>LAKE RIDGE HIGH</b> 1234 Overlook Drive Lake Oswego, OR 97034	278,300	196,308	3	1970	1990 2004	RM1, S1	R4, R5	M4	20	277/480V 3000A	50	125 KVA	25	0.05
<b>PALISADES</b> 1500 Greentree Rd. Lake Oswego, OR 97034	45,680	51,996	1	1959	1990	W2	R3, R5, R6	M2	26	120/208V 1200A	50	N/A	N/A	0.35
<b>UPLANDS</b> 2055 SW Wembley Park Rd Lake Oswego OR 97034	51,676	54,178	1	1961	1990 2020	W2	R5, R6	M2	26	120/208V 1200A	50	N/A	N/A	0.05
<b>FACILITIES OPERATIONS</b> 4200 SW Douglas Way Lake Oswego OR 97035	10,049	7,509	2	1976	N/A	PC1	R2	M6	23	120/208V 400A	50	N/A	N/A	0.19
<b>BUS BARN</b> 4301 SW Beasley Way Lake Oswego OR 97035	2,559	2,777	1	1969	N/A	RM1	R5, R7	M1	16	120/240V 400A	50	N/A	N/A	0.36
<b>ADMINISTRATION</b> 2501 Country Club Road Lake Oswego OR 97034	7,613	7,990	1	1961	1988	W2	R5	M3	18	120/240V 400A	50	N/A	N/A	0.35
<b>TECHNOLOGY</b> 2501 Country Club Road Lake Oswego OR 97034	10,150	11,372	2	1959	N/A	RM1	R6	M1	16	120/240V 600A	50	N/A	N/A	0.32
<b>SWIMMING POOL</b> 2501 Country Club Road Lake Oswego OR 97034	13,260	18,695	1	1971 1991	NONE	RM1, S2A	R5, R6	M5	26	120/208V 600A	50	N/A	N/A	0.48



Facility Condition Index (FCI) = cost to repair (excluding site work)/cost to replace (excluding site work).

NO. OF BUILDINGS	NO. OF STORIES	BUILDING TYPE	ASCE 41-13 LATERAL STRUCTURAL SYSTEM
1	1	Wood frame with unknown sheathing shear walls	W2
1	1	Wood frame with plywood and gypsum board sheathing	W2
1	1	Wood frame with unknown sheathing shear wall	s
1	2	Wood frame with plywood shear walls	W2
1	1	Wood frame with gypsum board sheathing, reinforced clay brick shear walls	W2, RM1
1	1	Wood frame with plywood and gypsum board sheathing	W2
1	1	Wood frame with gypsum board sheathing	W2
1	1	Lakeridge: Reinforced CMU shearwalls	RM1
7	3	Main building: steel braced frame and steel moment frame (MF), rein. CMU Gym Building: reinf. CMU and steel MF	S1, S2, RM1
5	3	Main building: steel braced frame and steel moment frame (MF), Reinf. CMU Gym Building: reinf. CMU and reinf. conc.	RM1, S1, S2, C2
1	1	Wood frame with gypsum board sheathing	W2
1	1	Wood frame with gypsum board sheathing	W2
2	2	Main building: precast concrete tilt panels Shed: none	
1	1	Assumed reinforced masonry shear walls	RM1
1	1	Wood frame with gypsum board sheathing	W2
1	2	Concrete masonry unit shear wall with precast concrete columns and wood sheathed roof	RM1
1	1	Concrete masonry unit shear wall and steel bar X bracing with CMU columns and plywood sheathed roof	RM1, S2A

ROOF TYPE	
R1	Membrane over metal deck
R2	Comp Shingles
R3	Membrane over plywood deck
R4	Metal, raised Seam
R5	TPO
R6	Ballast Over
R7	Asphalt Membrane

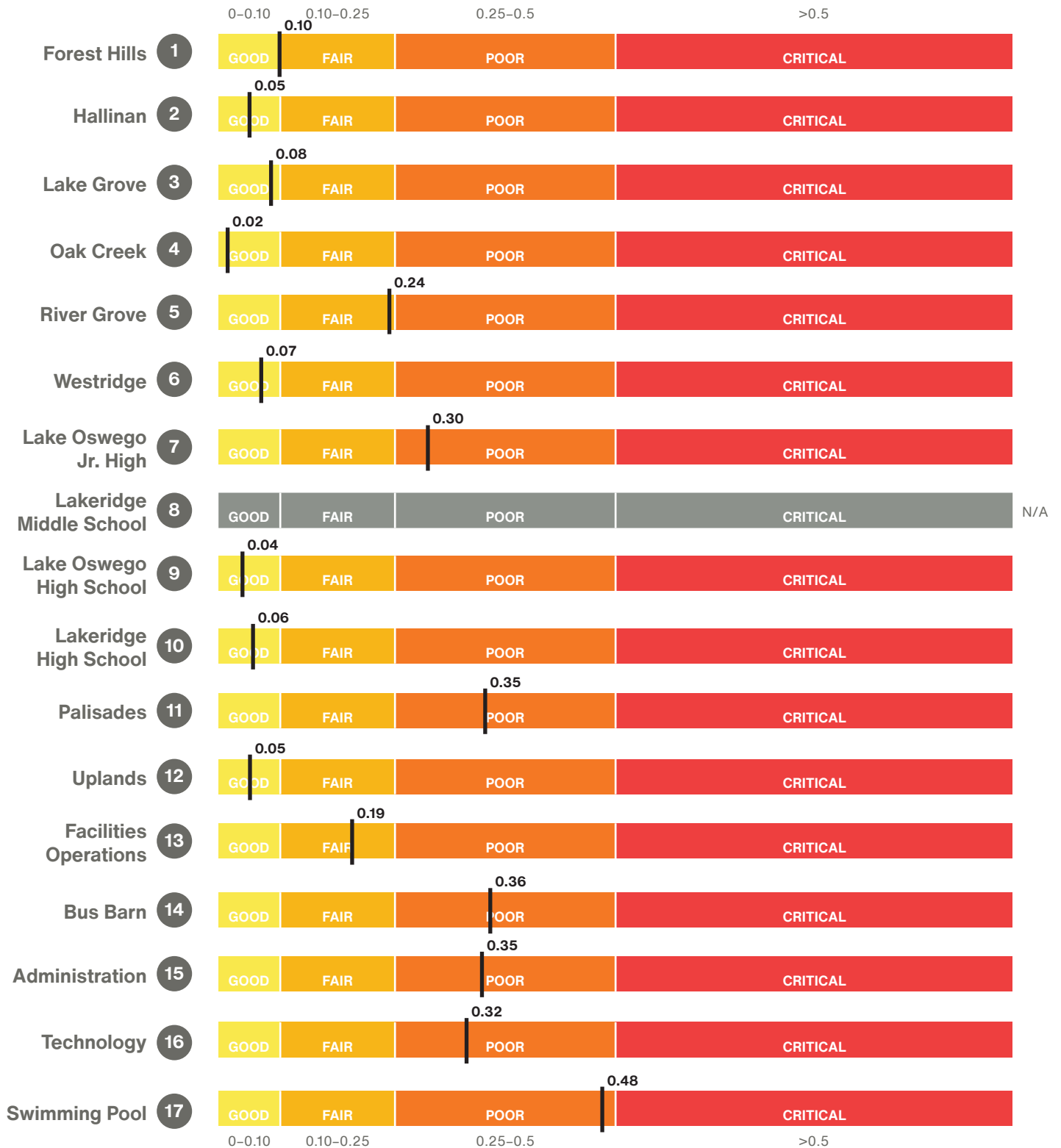
MECHANICAL	
M1	Package rooftop units
M2	Unit ventilators (classrooms), constant volume AHU (common spaces) heating water, no cooling
M3	Forced air furnace-gas heating/DX, cooling, packaged rooftop
M4	AHU with VAV TU — heating water
M5	Constant volume AHU-heating water, no cooling
M6	Radiant gas heated
M7	Multi-zone AHU-heating water, no cooling
M8	AHU with VAV TU heating water, no cooling

LATERAL STRUCTURAL SYSTEM	
C2	Concrete shear wall
W2	Wood frame commercial and industrial buildings with a floor area larger than 5,000 Sq ft
S1	Steel moment — resisting frame
S2	Braced steel frame
S2A	Steel braced frame with flexible diaphragm
RM1	Reinforced masonry with flexible floor and roof diaphragms
PC1	Titilt-up construction

## SEISMIC EVALUATIONS:

Seismic evaluations based on FEMA 154 standards were completed for the 2015 FCA report. Since that time, the District has utilized 2017 capital improvement funding to undergo significant seismic upgrades to all school facilities. An updated seismic evaluation has not been completed for the current FCA effort.

## FACILITY CONDITION INDEX SUMMARY



## LAKE OSWEGO BY THE NUMBERS

**2020 enrollment:** 7,039 students (as of June 2020)

**Number of Facilities:** 17

- Elementary Schools: 6
- Junior High/Middle Schools: 2
- High Schools: 2
- Closed Schools: 2
- Other Facilities: 5

**Total Building Area:** 1,233,470 SF

The Facilities Condition Assessment (FCA) is based on the physical observation of building conditions and reviews of the existing building drawings and documentation provided by the district. This report provides a cost estimate that includes the facility condition index number (FCI) for each site. The outcomes of the FCA total cost of deficiencies is (not including site deficiencies): \$57.9 million.

The Facility Condition Index (FCI) numbers range from 0.10–0.82.

The 3 facilities with the highest FCI were:

- |                            |           |
|----------------------------|-----------|
| 1. Swimming Pool*          | FCI: 0.48 |
| 2. Administration Building | FCI: 0.35 |
| 3. Bus Barn                | FCI: 0.36 |

The four criteria for recommending replacement are:

- High FCI number
- Very high seismic risk
- Major accessibility and safety issues
- Inadequate or dysfunctional educational environments

The costs generated for replacement costs are based on current local industry standards of similar size and complexity. Replacement cost of buildings accounts for a “like-for-like” replacement, not redesign of a new school with updated educational specifications. Estimated building replacement costs are based on 2020 3rd quarter rates and are as follows:

- Elementary School = \$450/sf
- Middle School/Junior High = \$485/sf
- High School = \$510/sf
- Admin/Other = \$415/sf
- Bus Barn = \$425/sf

\*A full replacement Swimming Pool facility was in the design phase during the writing of this report.

## SUMMARY

### Architectural

- The majority of the buildings are in adequate condition in terms of maintaining a building envelope and a safe environment for student learning.
- Many roofs have been replaced with TPO which does not provide a long-lasting roof system.
- Seismic joints have been roofed over which inhibits seismic movement and pulls the roofing away from the building.
- Single pane glazing as well as exterior windows that do not have adequate flashing or have broken seals are recommended for replacement.
- Door hardware that allows access into classrooms from the exterior should be replaced. Interior finishes were recommended for replacement based on regular traffic, building envelope impact such as water staining, and code requirements.
- The (17) sites FCI results ranged from 0.00 for the new Lakeridge Middle School to 0.48 for the Pool.
- Security glass is recommended for all ground-level windows.

### Structural

- Although some schools have had seismic improvements completed through the recent bond projects, there are still several buildings in the district do not meet Life Safety Performance Level standards based on ASCE 41-13, Seismic Evaluation and Retrofit of Existing Buildings.
- All buildings were assessed to a Life Safety Performance Level, except separate gymnasium buildings or gymnasium wings which were assessed to an Immediate Occupancy Performance Level to act as an emergency operations or recovery center.
- To meet current standards, the majority of buildings require roof-level seismic strengthening (diaphragm and connections of diaphragm to walls). There are also many buildings that require below roof level work.
- Below roof level work could involve strengthening existing shear walls for in-plane and out-of-plane seismic loads, strengthening braced frame connections and attaching floor level diaphragms to lateral elements.
- Most of the buildings were constructed prior to the advent of modern building codes.
- Seismic forces and seismic detailing requirements have changed substantially since most of the buildings were designed.



**MEP**

- The lighting for all buildings appears to have been updated to high efficiency T5, T8 or CFL type.
- The high schools (LOHS and LHS) had major projects in 2003/2004 and the MEP systems still appear to be in good physical condition.
- The MEP systems for most of the remaining buildings were overhauled or replaced as a part of a major project in 1990. Generally, the mechanical equipment at these schools is nearing the end of useful life and was recommended for replacement or an overhaul. Projects recently completed as part of the current bond have included upgrade of outdated mechanical components.
- Four schools (LMS, LOJH, and Palisades) are using the 1960s era boilers and piping for the building's heating system. These systems are at the end of useful life, which will require significant work to replace these systems.
- Original 60s era galvanized domestic water piping was noted at three schools (LMS, LOJH, and Palisades). A recommendation to replace this piping was made at these buildings, which will result in significant work on the plumbing system.
- Two of the schools (Palisades and Lake Grove) are using pneumatic or local electronic control systems. These schools were recommended for conversion to a direct digital control (DDC) system.
- Heery made an estimate of control points needed for each school, and an estimate of \$684 per point was used to determine the cost for conversion.
- As a part of the 1990 projects, most of the branch panels in the electrical distribution system were replaced, and the original main distribution panels (MDP) were maintained in service. In this report, the original 60x era MDP are recommended for replacement.
- Upgrades to ventilation systems based on lessons learned during the COVID-19 pandemic are recommended.

**Pool**

- The pool is not meeting the current codes and industry standards. Facilities built around the same time are commonly in similar condition.
- Major renovations (e.g. pool deck replacement, pool main drain modification, pool slope correction) often require that the swimming pool and related systems all be brought up to current code standards.
- The life expectancy for a commercial swimming pool with a reinforced concrete shell is approximately 45 years. The current swimming pool is +/- 50 years old.
- The Terracon Aquatic Center Facility Condition Assessment (10.2.2015) report entails significantly more detail about the current condition of the swimming pool. From a longevity and value standpoint total replacement is strongly recommended.
- The pool facility is slated for replacement. This is not included in the current FCI score or summary of findings.

## HOW TO USE THIS MANUAL

This report consists of the following parts:

- **Part 1: The Executive Summary** provides an introduction to the overall process, methodologies, and overall findings.
- **Part 2: The Facility Analysis** provides an overview of each facility, cost estimate summary and FCI number, structural deficiencies and detailed recommendations for improvements.
- **Part 3: The Field Documents** section assembles all forms, marked-up drawings and other documents produced by the assessment team for this report.



# FACILITY ANALYSIS

## SUMMARY

The Facility Analysis documents the assessment findings into a facility-by-facility format that allows for an in-depth understanding of each facility's condition and the individual items that are associated with the repair and renovation costs. The following documentation has been prepared for each of the district's 17 facilities:

- Facility Fact Sheet
- Cost Estimate Summary
- Structural Deficiencies List

### Facility Fact Sheet

The Facility Fact Sheet provides an overview for each facility including a map, a representative photo, a facility summary, a Facility Cost Repair Allocation chart which shows the percentage of the overall building repair cost that is allocated to different systems, and a Facility Condition Index (FCI) diagram with the overall FCI number. This sheet is accompanied by a floor plan(s) to provide more detail into each facility's layout.

### Cost Estimate Summary

The Cost Estimate Summary itemizes the site and building deficiencies and the associated costs for their equivalent replacement. The cost estimate updates were prepared by a professional estimator, Rider Levett Bucknall, issued on June 22, 2020. The costs are derived from current labor rates and cost of construction materials. Soft costs such as design and permitting are not included in the estimate. The estimate is broken down by system and by trade to provide an in-depth understanding of facility condition and the costs to restore each to a safe condition. The overall FCI number is calculated from this list as it compares the two overall costs: the cost to repair/the cost to replace.

### Structural Reviews

Structural reviews included a review of available structural drawings, walkthroughs of the buildings and preliminary seismic evaluations to determine likely seismic deficiencies. Estimated probable costs per square foot for seismic rehabilitation of these deficiencies are provided for each site. Both structural and nonstructural deficiencies listed for each site are included in the estimate. The dollar per square foot amounts assume that seismic rehabilitation is not occurring in conjunction with other upgrade work and includes an allotment for repairing architectural features after the structural work is complete. These costs are based on previous seismic rehabilitation studies of other campuses of similar building construction types and ages. Note that these estimates exclude the cost of re-roofing (membrane, shingles, etc.) as this cost is included in the architectural section. Non-seismic related structural deficiencies observed on site are also listed. These items are listed under "Other Structural Deficiencies". The costs to repair these items are not included in the seismic cost per square foot estimates but are itemized in the Cost Estimate Summary.

The structural and nonstructural seismic assessments were based on checklists from ASCE 41-13, Seismic Evaluation and Retrofit of Existing Buildings. A list of building type definitions used in ASCE 41-13 is provided in Table 1 for reference. Seismically separated Gymnasiums and Gymnasium wings were assessed using the Immediate Occupancy Performance Objective. All other structures were assessed using the Life Safety Performance Objective. These assessments are high level and used the Tier 1

checklists as guidance. A complete Tier 1 evaluation was beyond the scope of this facility condition assessment and was not performed for this report. There are a number of items in the checklists that are marked as unknown. These items should be confirmed during a complete Tier 1 evaluation before implementing a retrofit plan. Should any of these structures be chosen for a seismic rehabilitation grant application, comprehensive ASCE 41-13 evaluations will be required at that time. The results of comprehensive evaluations are anticipated to indicate retrofit work within the cost per square foot estimates provided in this assessment.

It is unknown if liquefaction is a hazard at these sites. We recommend that liquefaction potential be confirmed with a geotechnical engineer as this would affect all building foundations. All cost estimates provided assume liquefaction is not present.

The structural assessments have not been updated since the original 2015 reviews. However, some structural assessments have been removed from this edition to account for the 2017 bond projects that addressed the recommendations for each building where improvements occurred. The structural recommendations that have not been addressed are still in effect. The cost estimates for these recommendations have been updated to 2020 construction costs.

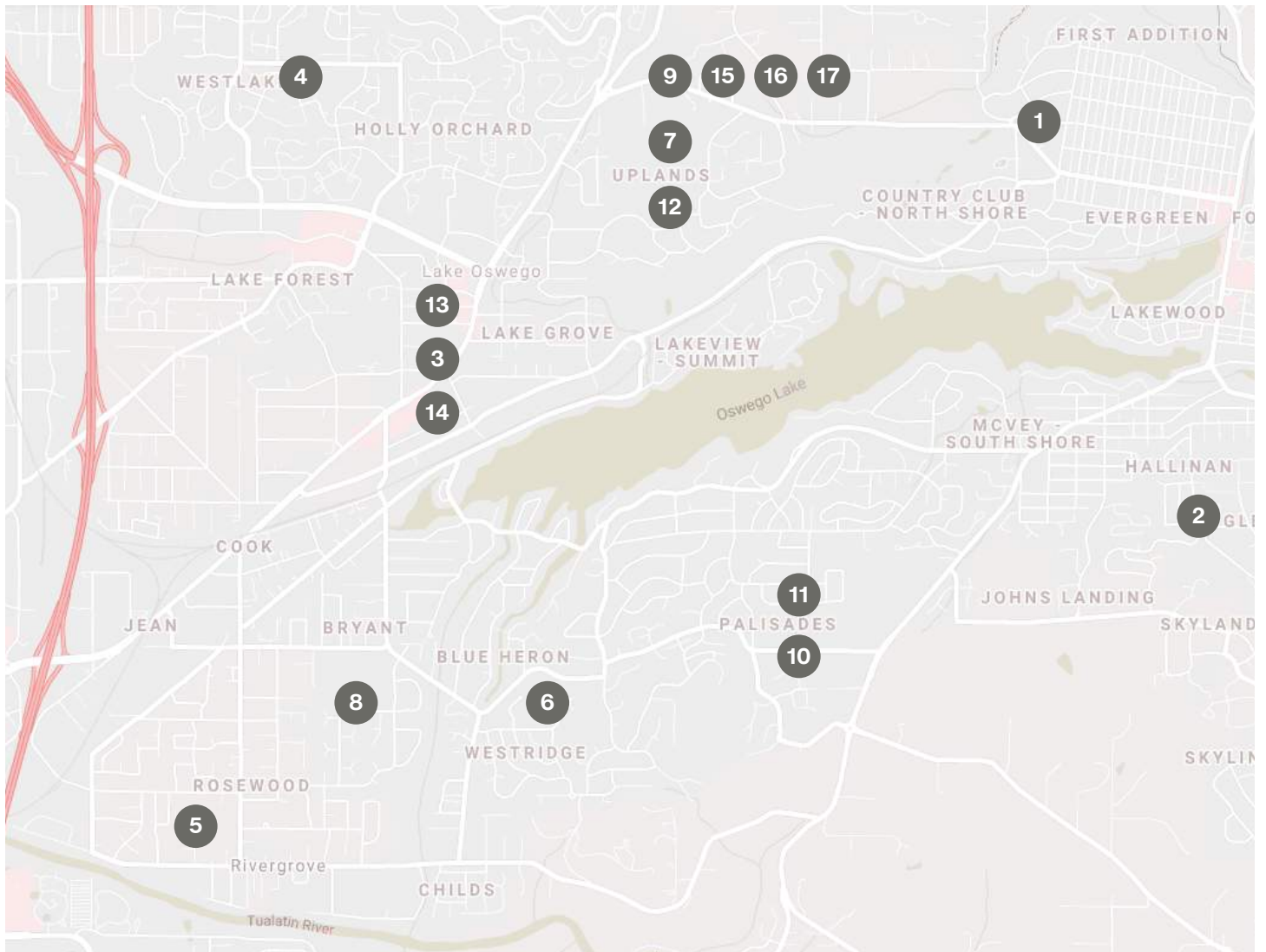




## ASCE 41 BUILDING TYPES

ABBREVIATION	DESCRIPTION
W1	Wood Light Frame
W1A	Multi-Story, Multi-Unit Residential Wood Frame
W2	Wood Frame, Commercial and Industrial
S1	Steel Moment-Frame with Stiff Diaphragm
S1A	Steel Moment-Frame with Flexible Diaphragm
S2	Steel Braced Frame with Stiff Diaphragm
S2A	Steel Braced Frame with Flexible Diaphragm
S3	Steel Light Frame
S4	Dual System with Backup Steel Moment Frame and Stiff Diaphragm
S5	Steel Frame with Infill Masonry Shear Wall and Stiff Diaphragm
S5A	Steel Frame with Infill Masonry Shear Wall and Flexible Diaphragm
C1	Concrete Moment Frame
C2	Concrete Shear Wall with Stiff Diaphragm
C2A	Concrete Shear Wall with Flexible Diaphragm
C3A	Concrete Frame with Infill Masonry Shear Wall and Stiff Diaphragm
C3A	Concrete Frame with Infill Masonry Shear Wall and Flexible Diaphragm
PC1	Precast or Tilt-Up Concrete Shear Wall with Flexible Diaphragm
PC1A	Precast or Tilt-Up Concrete Shear Wall with Stiff Diaphragm
PC2	Precast Concrete Frame with Shear Wall
PC2A	Precast Concrete Frame without Shear Wall
RM1	Reinforced Masonry Bearing Wall
RM1A	Reinforced Masonry Bearing Wall with Stiff Diaphragm
URM	Unreinforced Masonry Bearing Wall with Flexible Diaphragm
URMA	Unreinforced Masonry Bearing Wall with Stiff Diaphragm

## FACILITY OVERVIEW



**1** Forest Hills ES



**2** Hallinan ES



**3** Lake Grove ES



**4** Oak Creek ES



**5** River Grove ES



**6** Westridge ES



**7** Lake Oswego Junior High



**8** Lakeridge Middle School



**9** Lake Oswego HS



**10** Lakeridge HS



**11** Palisades



**12** Uplands



**13** Facilities Operations



**14** Bus Barn



**15** Administration



**16** Technology



**17** Swimming Pool

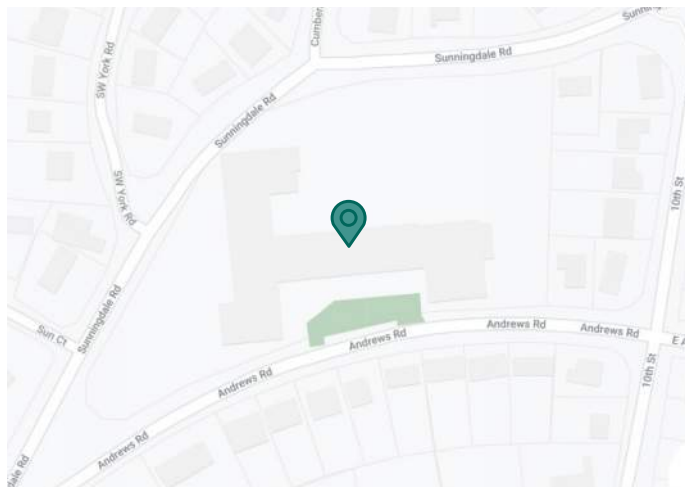
# FOREST HILLS ELEMENTARY SCHOOL

## FACT SHEET



Forest Hills Elementary School is comprised of 452 students in grades from kindergarten to fifth grade (K–5). The main entryway is approached from Andrews Road.

Renovations for this school are planned for 2021 and will include interior paint and carpet replacement, exterior brick repainting and cleaning, and roof truss strengthening.



1133 Andrews Road  
Lake Oswego, OR 97034

1

### FOREST HILLS ELEMENTARY SCHOOL

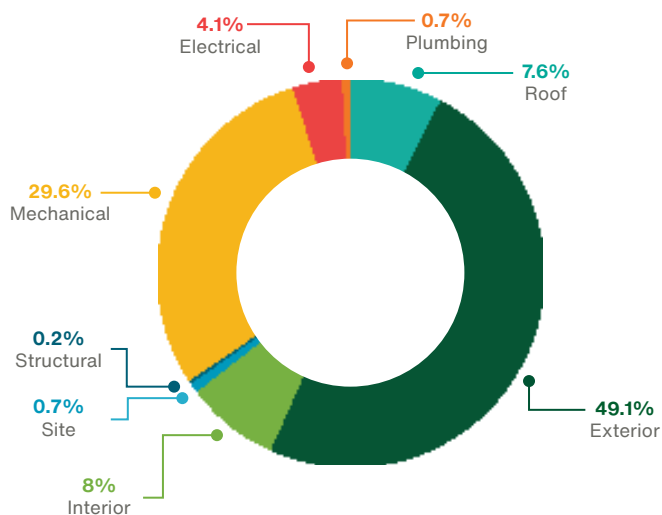
YEAR BUILT	1946
REMODELS	1990, 2004, 2013, 2021
BUILDING AREA	50,695 SF
TOTAL HEIGHT	21'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	Ballast, Shingle, Standing Seam
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Unit Ventilators in Classrooms Constant Volume AHU in Common spaces

### FACILITY CONDITION INDEX

GOOD	FAIR	POOR	CRITICAL
0–0.10	0.10–0.25	0.25–0.5	>0.5

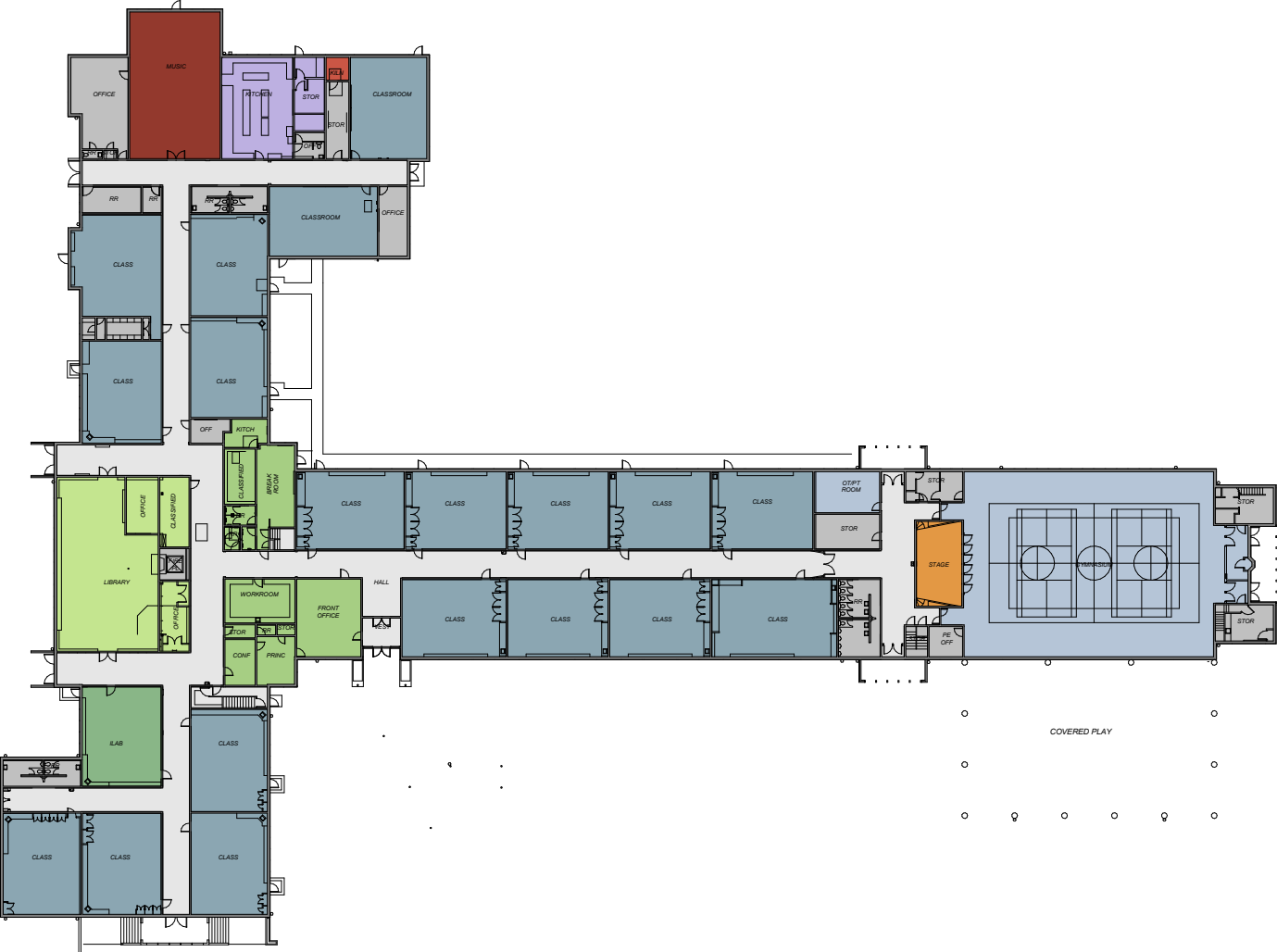
FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

DRAWINGS





## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Provide new SBS BUR roofing and sheet metal accessories. Roof replacement due to seismic rehabilitation work	7291	sf	\$24.86	\$181,240		X	
Replace sheet metal flashing	60	lf	\$22.37	\$1,342		X	
Provide new SBS BUR roofing at entry areas and sheet metal accessories, to meet current energy code	200	sf	\$65.87	\$13,175		X	
TOTAL COST			\$195,757				
Architectural Exterior							
Provide concrete slab @ side entry porch	173	sf	\$41.02	\$7,096		X	
Replace window system with storefront system	4650	sf	\$74.57	\$346,769		X	
Replace exterior window glass with security glazing	2500	sf	\$150.00	\$375,000		X	
Replace octagonal windows (60 sf each)	7	ea	\$4,971.60	\$34,801		X	
Repoint brick masonry	13800	sf	\$31.07	\$428,801		X	
Replace plywood siding w/medium grade rain screen	500	sf	\$19.89	\$9,943		X	
Replace wood fascia boards	1650	lf	\$2.49	\$4,102			X
Re-attach roof insulation in attic	14500	sf	\$1.24	\$18,022		X	
Repair floor slab in mechanical access tunnel	1900	sf	\$18.64	\$35,423		X	
TOTAL COST			\$1,259,956				
Architectural Interior							
Replace broadloom carpet with carpet tile; new rubber base to match (E)	16000	sf	\$8.08	\$129,262			X
Replace carpet tile; install new rubber base	2112	sf	\$8.70	\$18,375			X
Replace VCT flooring; new rubber base to match (E)	1427	sf	\$5.59	\$7,981			X
Refinish wood flooring	440	sf	\$3.73	\$1,641			X
Replace sheet flooring; new rubber base to match (E)	1680	sf	\$9.94	\$16,705			X
Repaint wall	13000	sf	\$1.24	\$16,158			X
Repair damaged p-lam casework	16	sf	\$186.44	\$2,983			X
Refinish wood door and frame	20	ea	\$621.45	\$12,429			X
TOTAL COST			\$205,533				
Site							
Repave entry sidewalk	1800	sf	\$8.00	\$14,400		X	
Recaulk sidewalk	180	lf	\$15.00	\$2,700		X	
TOTAL COST			\$17,100				
Structural							
Repair roof around expansion/firewalls	790	sf	\$6.21	\$4,909		X	
TOTAL COST			\$4,909				
Mechanical							
Repair hot water convectors: update to DDC controls	13	pts	\$683.60	\$8,887		X	
Ongoing Mechanical System Upgrades Allowance	1		\$750,000.00	\$750,000	X		
TOTAL COST			\$758,887				

					PRIORITY			
RECOMMENDATIONS	QUANTITY		UNIT COST	COST	I	II	III	IV
Electrical								
Replace 120/208V 1600A Main Distribution Switchgear	1	ea	\$14,666.22	\$14,666		X		
Add surge suppression at Main Distribution Switchgear	1	ea	\$1,367.19	\$1,367		X		
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	50695	sf	\$1.75	\$88,716		X		
TOTAL COST				\$104,750				
Plumbing								
Repair floor mounted urinals	7	ea	\$2,610.09	\$18,271		X		
TOTAL COST				\$18,271				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$2,565,162  
TOTAL COST TO REPLACE \$25,047,000  
=FCI **0.102413942**

I Priority Cost: \$ 750,000.00  
II Priority Cost: \$ 1,605,527.65  
III Priority Cost: \$ 209,634.35  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

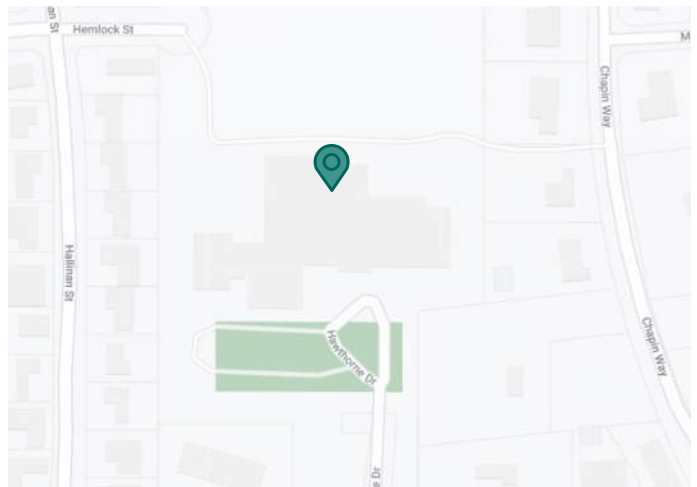
# HALLINAN ELEMENTARY SCHOOL

## FACT SHEET



Hallinan Elementary was designed to have its academic programs surround a centralized library along with a wing of classrooms on the east end. The school serves 435 students from kindergarten through fifth grade.

Renovations to this school were completed in 2020. Structural improvements were included in the renovation, therefore no seismic evaluation information is provided in this updated document.



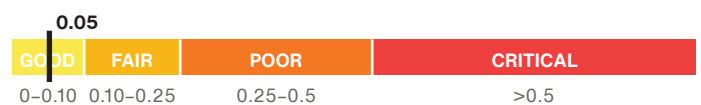
16800 Hawthorne Drive  
Lake Oswego, OR 97034

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### HALLINAN ELEMENTARY SCHOOL

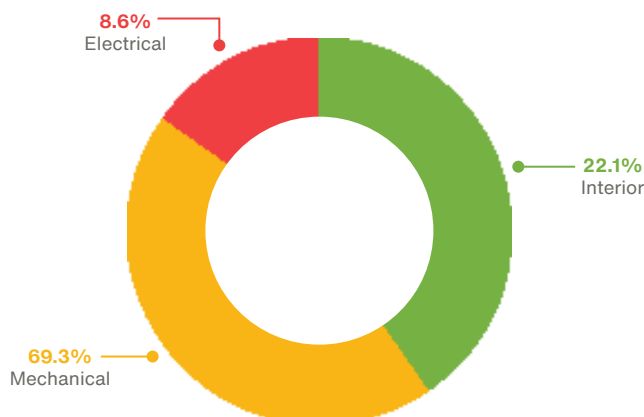
YEAR BUILT	1980
REMODELS	2020
BUILDING AREA	46,712 SF
TOTAL HEIGHT	21'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	TPO, Ballast, Standing Metal Seam
FLOOR FINISHES	Carpet Tile, VCT, Ceramic Tile, Concrete
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Metal Stud
HVAC TYPE	AHU with VAV TU

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY		UNIT COST	COST	PRIORITY			
					I	II	III	IV
Architectural Roof								
None at this time.								
TOTAL COST				\$0				
Architectural Exterior								
None at this time.								
TOTAL COST				\$0				
Architectural Interior								
Paint and repaint gypsum plaster wall	10	sf	\$2.49	\$25			X	
Replace carpet tile; install new rubber base	3131	sf	\$8.70	\$27,241			X	
Replace carpet in all classrooms	21057	sf	\$7.25	\$152,663		X		
Replace one 3'x7' acoustic wall panel	1	ea	\$497.16	\$497			X	
Replace hardware on wood door	18	ea	\$932.18	\$16,779			X	
Replace wood door and HM frame	11	ea	\$2,237.22	\$24,609			X	
TOTAL COST				\$221,814				
Site								
None at this time.								
TOTAL COST				\$0				
Structural								
None at this time.								
TOTAL COST				\$0				
Mechanical								
Replace pneumatic controls with DDC controls	231	pts	\$683.60	\$157,910		X		
Replace 880 CFM hot water unit heater	2	ea	\$2,610.09	\$5,220		X		
Replace in-line centrifugal to variable volume with VFD drive	2	ea	\$4,225.86	\$8,452		X		
Replace 3K CFM gas fired makeup air unit	1	ea	\$7,705.98	\$7,706		X		
Replace kitchen exhaust fan	1	ea	\$34,428.33	\$34,428		X		
Replace kitchen cooler condensing unit, relocate out of boiler room	2	ea	\$6,463.08	\$12,926		X		
Replace 1.5 ton window AC with ductless split system	1	ea	\$2,982.96	\$2,983		X		
Repair kitchen hood: note says "out of service"	1	ea	\$2,112.93	\$2,113		X		
Ongoing Mechanical Upgrades Allowance	1		\$450,000.00	\$450,000		X		
Architectural Finishes Allowance	1	ls	\$12,429.00	\$12,429		X		
TOTAL COST				\$694,168				



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Electrical							
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	49160	sf	\$1.75	\$86,030		X	
TOTAL COST				\$86,030			
Plumbing							
None at this time.							
TOTAL COST				\$0			

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$1,002,012  
TOTAL COST TO REPLACE \$22,122,000  
=FCI **0.045294828**

I Priority Cost: \$ -  
II Priority Cost: \$ 932,860.96  
III Priority Cost: \$ 69,151.23  
IV Priority Cost: \$ -

### PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

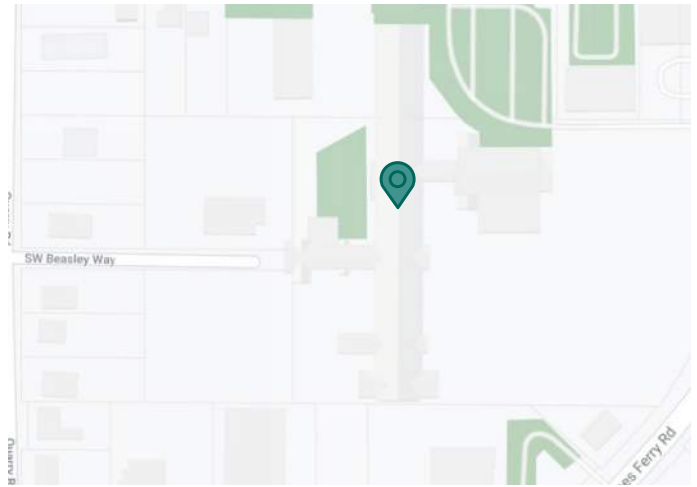
# LAKE GROVE ELEMENTARY SCHOOL

## FACT SHEET



Lake Grove Elementary is comprised in the form of a long hallway of classrooms with the gym anchored on the east alongside the main entrance. The school serves 416 students from kindergarten to fifth grade.

Renovations for this school are planned for 2021 and include seismic upgrades, therefore no structural evaluation is included in this report.



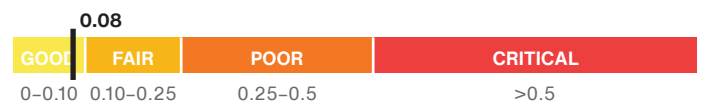
15777 Boones Ferry Road  
Lake Oswego, OR 97035

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### LAKE GROVE ELEMENTARY SCHOOL

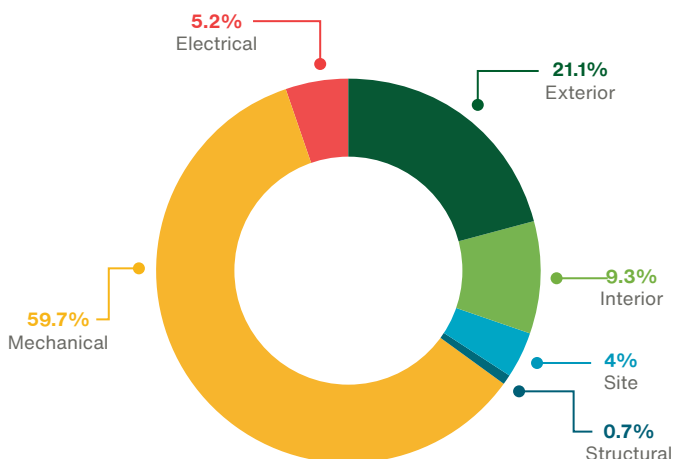
YEAR BUILT	1949
REMODELS	1990, 2021
BUILDING AREA	62,652 SF
TOTAL HEIGHT	25'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	Shingle
FLOOR FINISHES	Carpet Tile, VCT, Ceramic Tile
CEILING FINISHES	ACT, Gyp, Board
PARTITION TYPE	Gyp, Board over Wood Stud
HVAC TYPE	Constant Volume AHUs

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

## DRAWINGS



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
None at this time.							
			TOTAL COST	\$0			

<b>Architectural Exterior</b>							
Repair HM door and frame	16	ea	\$1,118.61	\$17,898		X	
Replace exterior window glass with security glazing	1450	sf	\$150.00	\$217,500		X	
Replace window perimeter seals	7000	lf	\$6.21	\$43,502		X	
Repaint 1x6 wood trim at brick	3100	lf	\$1.86	\$5,779			X
Replace wood trim	300	lf	\$12.43	\$3,729			X
Replace mechanical louver	100	sf	\$150.00	\$15,000			X
Masonry lintel replacement	50	sf	\$111.86	\$5,593		X	
Repoint brick masonry	950	sf	\$31.07	\$29,519		X	
Replace brick masonry	950	sf	\$43.50	\$41,326		X	
Replace storefront windows	135	sf	\$74.57	\$10,067		X	
Replace wood soffit	100	sf	\$24.86	\$2,486			X
Replace HM door and frame	21	ea	\$2,237.22	\$46,982		X	
Re-key exterior doors	37	ea	\$200.00	\$7,400		X	
			<b>TOTAL COST</b>	<b>\$446,781</b>			

<b>Architectural Interior</b>							
Replace broadloom carpet with carpet tile; new rubber base to match (E)	6300	sf	\$8.08	\$50,897			X
Replace carpet tile; install new rubber base	5000	sf	\$8.70	\$43,502			X
Replace VCT flooring; new rubber base to match (E)	3165	sf	\$5.59	\$17,702			X
Refinish wood flooring	475	sf	\$3.73	\$1,771			X
Replace sheet flooring; new rubber base to match (E)	120	sf	\$9.94	\$1,193			X
Repaint wall	30000	sf	\$1.24	\$37,287			X
Replace damaged 4'x8' fabric wrapped acoustical wall panel	19	ea	\$745.74	\$14,169			X
Patch and repaint gypsum board ceiling	380	sf	\$12.43	\$4,723			X
Repaint gyp. board ceiling	2320	sf	\$1.49	\$3,460			X
Replace plywood ceiling	385	sf	\$18.64	\$7,178			X
Repaint door and frame	80	ea	\$186.44	\$14,915			X
			<b>TOTAL COST</b>	<b>\$196,796</b>			

<b>Site</b>							
Repave side yard	22500	sf	\$3.73	\$83,896			X
			<b>TOTAL COST</b>	<b>\$83,896</b>			

<b>Structural</b>							
Repair roof around expansion/firewalls	2260	sf	\$6.21	\$14,045		X	
			<b>TOTAL COST</b>	<b>\$14,045</b>			

<b>Mechanical</b>							
Replace hot water coil, convert to VAV TU	45	ea	\$2,112.93	\$95,082		X	
Replace 3100 MBH hot water boiler, update to condensing hot water boilers	2	ea	\$75,816.90	\$151,634		X	
Replace low point drain valves	2	ea	\$932.18	\$1,864		X	
Ongoing Mechanical upgrades Allowance	1		\$750,000.00	\$750,000		X	
Convert HVAC systems to DDC	385	pts	\$683.60	\$263,184		X	
			<b>TOTAL COST</b>	<b>\$1,261,764</b>			

				PRIORITY			
RECOMMENDATIONS	QUANTITY	UNIT COST	COST	I	II	III	IV
Electrical							
Add surge suppression at main distribution panel	1	ea	\$1,367.19		X		
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	61652	sf	\$1.75		X		
TOTAL COST			\$109,258				
Plumbing							
None at this time.							
TOTAL COST			\$0				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$2,112,540  
TOTAL COST TO REPLACE \$27,743,400  
=FCI **0.076145675**

I Priority Cost: \$ -  
II Priority Cost: \$ 1,804,853.76  
III Priority Cost: \$ 307,686.17  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.



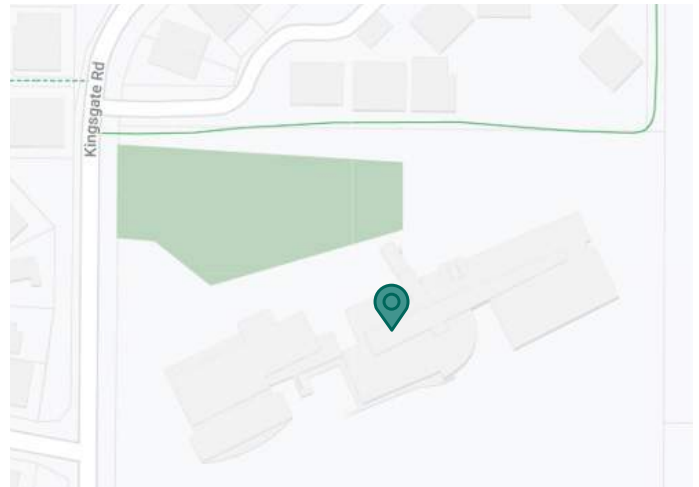
# OAK CREEK ELEMENTARY SCHOOL

## FACT SHEET



Oak Creek Elementary serves approximately 539 students from kindergarten through fifth grade. Oak Creek is set within a hill from the landscape to the south on Melrose Street.

Renovations to this school were completed in 2020. Structural improvements were included in the renovation, therefore no seismic evaluation information is provided in this updated document.



55 Kingsgate Road  
Lake Oswego, OR 97035

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### OAK CREEK ELEMENTARY SCHOOL

YEAR BUILT	1991
REMODELS	2020
BUILDING AREA	68,040 SF
TOTAL HEIGHT	43'
NUMBER OF FLOORS	2
OCCUPANCY	A-2.1, A-3, B-2, E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	Membrane over Plywood Deck
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	AHU with VAV TU

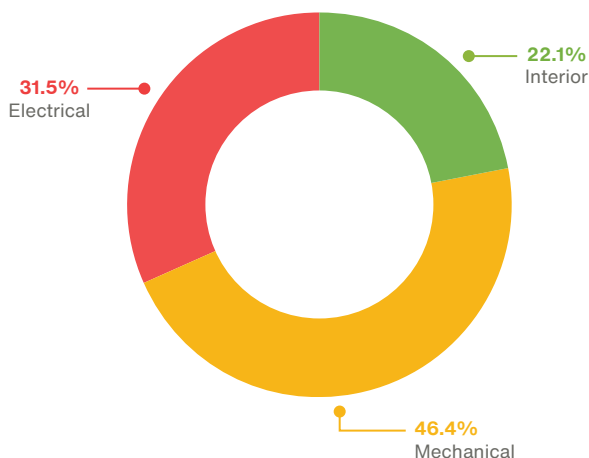
### FACILITY CONDITION INDEX

0.02



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION

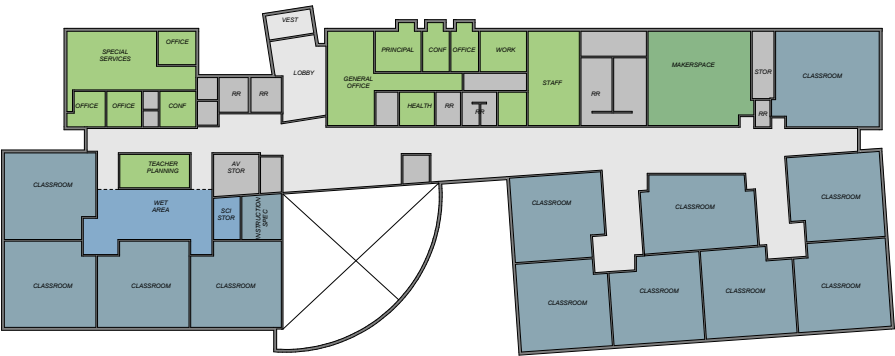
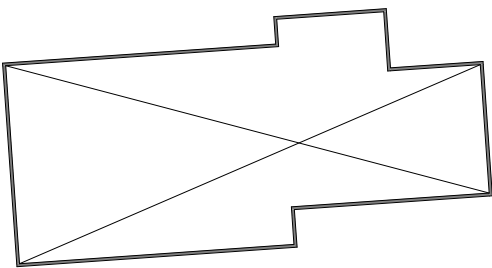


Repair costs totaling less than 0.1% are not included.

DRAWINGS



First floor



Second floor

## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY		UNIT COST	COST	PRIORITY			
					I	II	III	IV
Architectural Roof								
None at this time.								
TOTAL COST				\$0				
Architectural Exterior								
None at this time.								
TOTAL COST				\$0				
Architectural Interior								
Repaint gypsum plaster wall	16512	sf	\$1.24	\$20,523			X	
Replace carpet tile; install new rubber base	14081	sf	\$8.70	\$122,509			X	
TOTAL COST				\$143,032				
Site								
None at this time.								
TOTAL COST				\$0				
Structural								
None at this time.								
TOTAL COST				\$0				
Mechanical								
Ongoing Mechanical System Upgrades Allowance	1		\$300,000.00	\$300,000		X		
TOTAL COST				\$300,000				
Electrical								
Upgrade fire alarm system	68040	sf	\$3.00	\$204,120		X		
TOTAL COST				\$204,120				
Plumbing								
None at this time.								
TOTAL COST				\$0				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$647,152  
 TOTAL COST TO REPLACE \$30,618,000  
 =FCI **0.021136315**

I Priority Cost: \$ -  
 II Priority Cost: \$ 504,120.00  
 III Priority Cost: \$ 143,031.69  
 IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

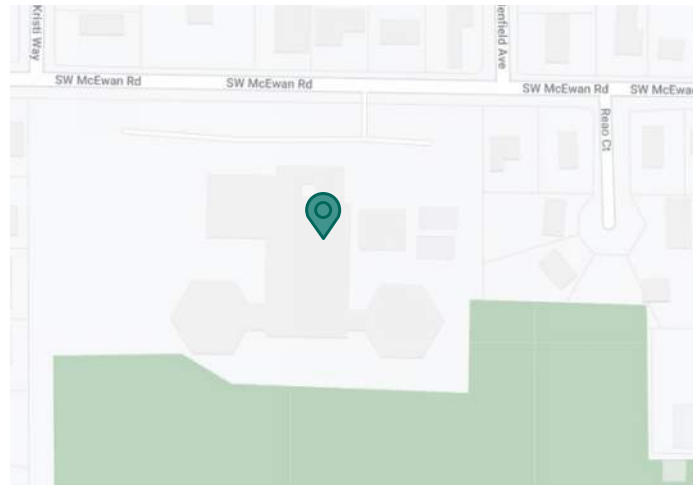
# RIVER GROVE ELEMENTARY SCHOOL

## FACT SHEET



River Grove Elementary serves 500 students from kindergarten to fifth grade. The school was designed to have a hub of classrooms in one hallway with two classroom wings on each end.

Renovations to this school were completed in 2020. Structural improvements were included in the renovation in the gymnasium only. Not all items from the original 2015 recommendations were incorporated into the renovation project.



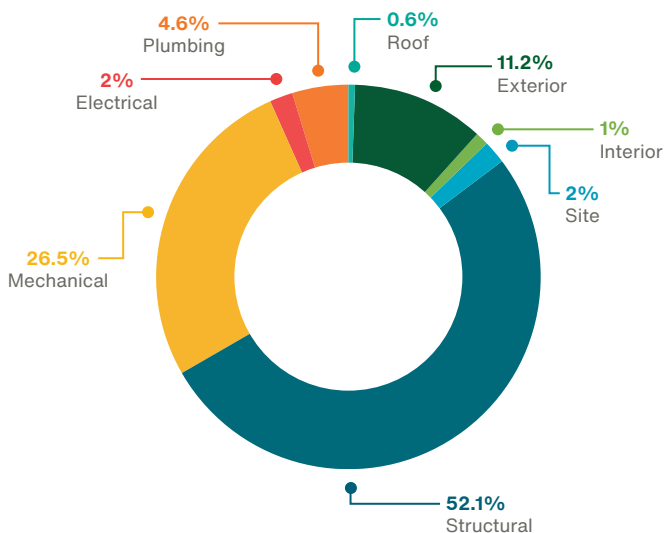
5850 McEwan Road  
Lake Oswego, OR 97035

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### RIVER GROVE ELEMENTARY SCHOOL

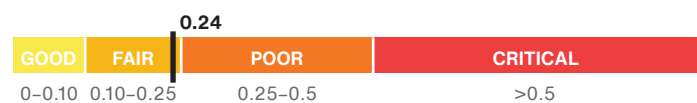
YEAR BUILT	1968
REMODELS	1990, 2020
BUILDING AREA	50,484 SF
TOTAL HEIGHT	22'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Clay Brick, Wood Frame
ROOF TYPE	TPO, Standing Metal Seam
FLOOR FINISHES	Carpet Tile
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Multi-Zone AHU

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

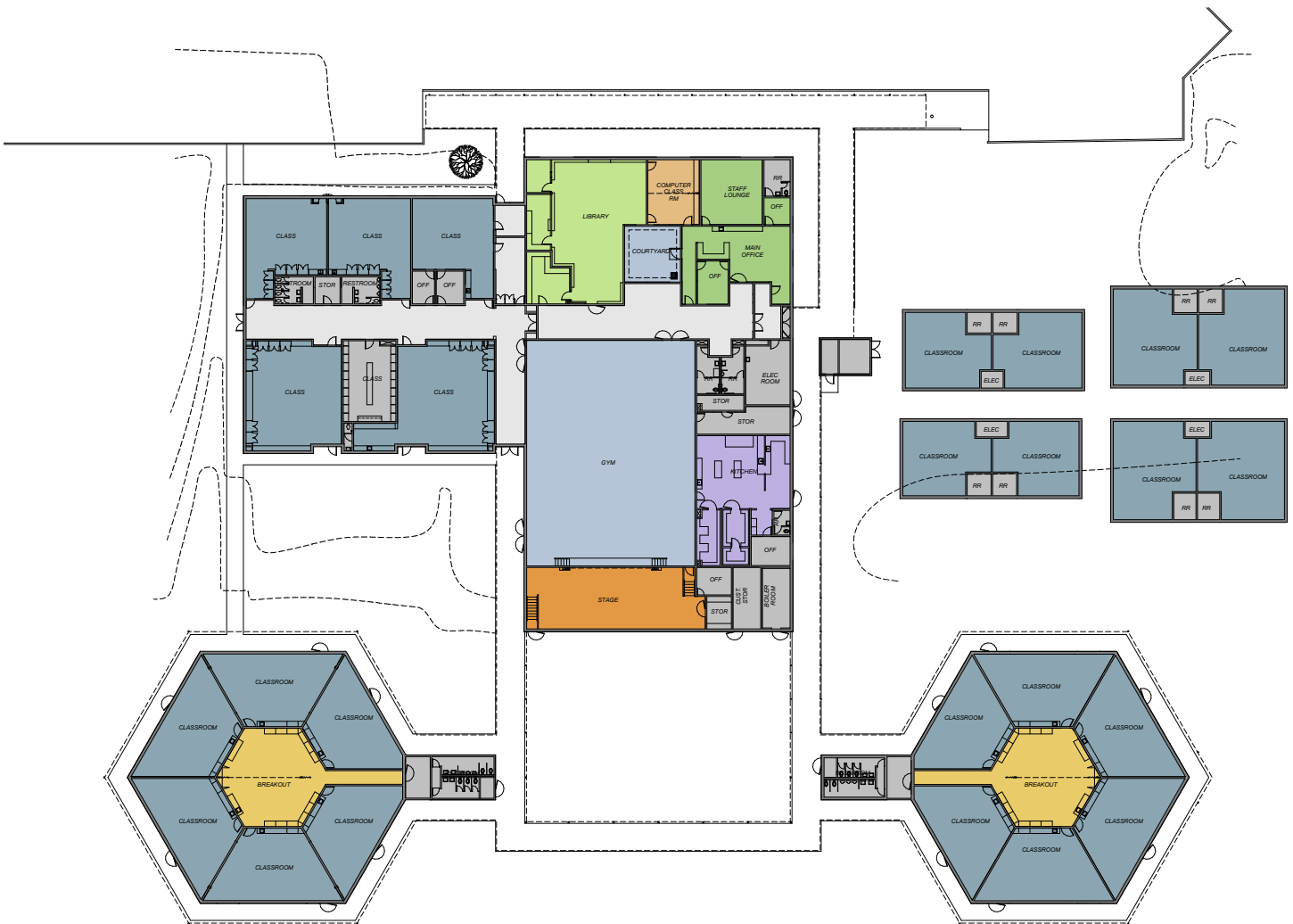
### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)



## DRAWINGS



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Provide fall protection, assume post & cable system	1	ls	\$31,072.50	\$31,073	X		
TOTAL COST			\$31,073				
Architectural Exterior							
Replace existing exterior glazing with security glazing	2226	sf	\$150.00	\$333,900		X	
Re-key exterior doors	45	ea	\$200.00	\$9,000		X	
Clean brick masonry	13500	sf	\$2.49	\$33,558			X
Replace metal panel (metal panel, weather barrier, gypsum sheathing)	24	sf	\$43.50	\$1,044		X	
Replace curtain wall system	800	sf	\$12.43	\$9,943		X	
Replace storefront windows	3105	sf	\$74.57	\$231,552		X	
TOTAL COST			\$618,998				
Architectural Interior							
Replace carpet tile; install new rubber base	4950	sf	\$8.70	\$43,066			X
Repaint HM door and frame	21	ea	\$186.44	\$3,915			X
Replace FRP	456	sf	\$9.94	\$4,534			X
Replace wood door	2	ea	\$1,740.06	\$3,480			X
TOTAL COST			\$54,996				
Site							
Repave parking lot	28760	sf	\$3.73	\$107,237		X	
Re-stripe parking lot	28760	sf	\$0.06	\$1,787		X	
TOTAL COST			\$109,025				
Structural							
Seismic rehabilitation work as the sole building upgrade (does not include costs for re-roofing)	44450	sf	\$62.15	\$2,762,345		X	
Seismic rehabilitation at roof level of the covered play structure (does not include costs for re-roofing)	6512	sf	\$12.43	\$80,938		X	
Repair roof truss chords	4400	sf	\$6.21	\$27,344		X	
TOTAL COST			\$2,870,627				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY				
				I	II	III	IV	
Mechanical								
Replace 4K CFM - Roof Top Multi-zone AHU, convert to VAV system MZ-1	1	ea	\$26,100.90	\$26,101		X		
Replace 4K CFM - Roof Top Multi-zone AHU, convert to VAV system MZ-2	1	ea	\$26,100.90	\$26,101		X		
Replace 9.5K CFM - Roof Top Multi-zone, convert to VAV system MZ-5	1	ea	\$44,744.40	\$44,744		X		
Replace 3.5K CFM - Roof Top Single Zone RTBF-1	1	ea	\$19,264.95	\$19,265		X		
Replace 1.3K CFM - Roof Top Single Zone DF-1	1	ea	\$9,943.20	\$9,943		X		
Replace roof top centrifugal exhaust fan EF-1	1	ea	\$22,372.20	\$22,372		X		
Replace roof top centrifugal exhaust fan EF-2 dishwasher exhaust fan	1	ea	\$7,705.98	\$7,706		X		
Replace electric wall heaters	4	ea	\$2,610.09	\$10,440		X		
Repair DDC/local electronic, update to DDC controls	138	pts	\$683.60	\$94,336		X		
Replace 1000MBH - hot water gas boiler B-1	1	ea	\$22,372.20	\$22,372		X		
Replace 600MBH - hot water gas boiler B-2	1	ea	\$16,157.70	\$16,158		X		
Replace in-line centrifugal, update to variable volume with VFD	3	ea	\$6,090.21	\$18,271		X		
Replace in-line centrifugal EF-1 Bldg A Addition RR	1	ea	\$4,225.86	\$4,226		X		
Replace roof top centrifugal exhaust fan EF-2 Bldg A Addition RR	1	ea	\$4,225.86	\$4,226		X		
Replace in-line centrifugal exhaust fan EF-3 Bldg A Addition RR	1	ea	\$4,225.86	\$4,226		X		
Ongoing Mechanical System Upgrades Allowance	1		\$1,100,000.00	\$1,100,000	X			
Architectural Finishes Allowance	1	ea	\$24,858.00	\$24,858		X		
TOTAL COST				\$1,455,345				

<b>Electrical</b>								
Replace 1600A-208/120V switchgear	1	ea	\$14,666.22	\$14,666		X		
Add surge protection at main distribution panel	1	ea	\$1,367.19	\$1,367		X		
Replace 120/208V 200A distribution panel M	1	ea	\$8,576.01	\$8,576		X		
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	50484	sf	\$1.75	\$88,347		X		
<b>TOTAL COST</b>				<b>\$112,956</b>				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY				
				I	II	III	IV	
Plumbing								
Replace 80 gal hot water heater	1	ea	\$3,666.56	\$3,667		X		
Replace galvanized steel domestic water piping	2000	lf	\$74.57	\$149,148		X		
Repair lav fixtures: update to 0.5 gpm, some have flow aerators	30	ea	\$1,988.64	\$59,659		X		
Replace WC fixtures, update to 1.6 gpf	10	ea	\$1,988.64	\$19,886		X		
Repair urinals: Pod C has leaked in the past	1	ea	\$1,988.64	\$1,989		X		
Repair hose bibbs: leaking in Pods A & C	2	ea	\$248.58	\$497		X		
Replace 50 gal electric hot water heater	2	ea	\$1,305.05	\$2,610		X		
Replace access doors above urinals, replace dry rot behind framing	2	ea	\$1,367.19	\$2,734		X		
Architectural Finishes Allowance	1	ls	\$12,429.00	\$12,429		X		
TOTAL COST				\$252,619				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$5,505,639  
 TOTAL COST TO REPLACE \$22,717,800  
 =FCI **0.242349105**

I Priority Cost: \$ 1,131,072.50  
 II Priority Cost: \$ 4,286,011.86  
 III Priority Cost: \$ 88,554.14  
 IV Priority Cost: \$ -

## PRIORITY LEVELS

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**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1967 and remodeled in 1990.** Clay brick exterior shear walls (minimal reinforcement) with wood interior bearing walls and wood framing. Tectum panel diaphragms in gym and wood structural panel diaphragms elsewhere.

Building Risk Category III

ASCE 41-13 Immediate Occupancy Performance Level for gym portion

ASCE 41-13 Life Safety Performance Level for main building

### Summary of Seismic Structural Deficiencies (included in cost per square foot above)

- Reinforcing steel — there is not adequate reinforcing steel in the exterior clay brick shear walls for in-plane or out-of-plane forces
- The wood structural panel diaphragm connections to walls should be strengthened
- Interior wood walls in the main building do not include wood structural panels or shear wall hold-downs
- Wood structural panel diaphragms likely need additional nailing to increase capacity
- Diaphragm chords and collectors should be added
- Bracing should be added to the covered plate structure and the diaphragm connections to columns should be strengthened

### Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)

- Sprinkler ceiling clearance — penetrations through panelized ceilings do not have appropriate clearances
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced
- Edge clearance for ceilings — free edges of suspended ceilings do not have a  $\frac{3}{4}$  inch clearance between the ceiling and the adjacent wall
- Edge support for ceilings — free edges of suspended ceilings are not supported by two inch closure angles
- There is an unreinforced masonry chimney on the roof above the cafeteria that should be removed

### Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost E Summary)

The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation.

- Some roof truss top chords are continuing over and bearing on the stud wall top plates with no positive connection, and the bottom chords have been cut to allow the wall to travel through. The bottom chord should be connected with strapping. These roof trusses cover 4,400 sf at an estimated repair cost of \$5/sf



## PHOTO OF DEFICIENCIES



DISCONTINUOUS BOTTOM CHORD OF TRUSS



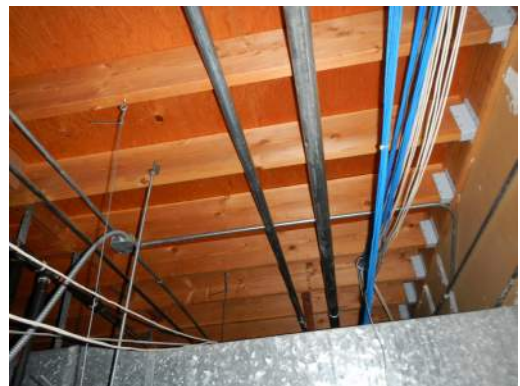
UNBRACED PIPING



FALL PRONE SHELVEING



KITCHEN – FALL PRONE CONTENTS



UNBRACED PIPING IN CORRIDOR

## PHOTO OF DEFICIENCIES (CONTINUED)



UNKNOWN DIAPHRAGM CONNECTION

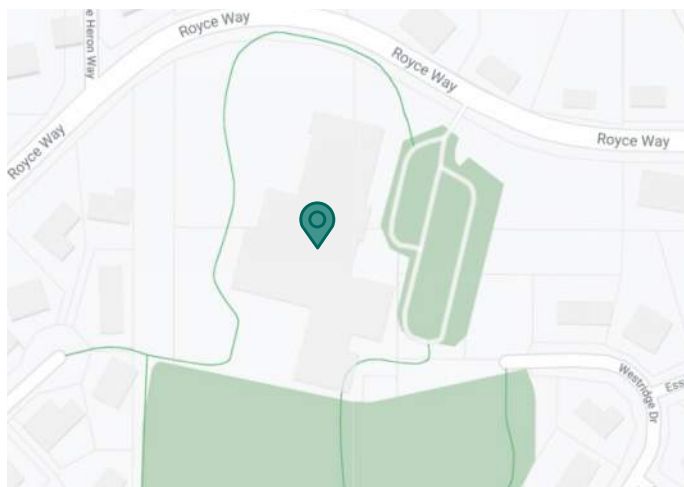
# WESTRIDGE ELEMENTARY SCHOOL

## FACT SHEET



Westridge Elementary School's design and layout are identical to Hallinan Elementary, but its orientation is different according to the topography of the landscape. The school serves 481 students from kindergarten to fifth grade.

Renovations to this school were completed in 2020. Structural improvements were included in the renovation, therefore no seismic evaluation information is provided in this updated document.



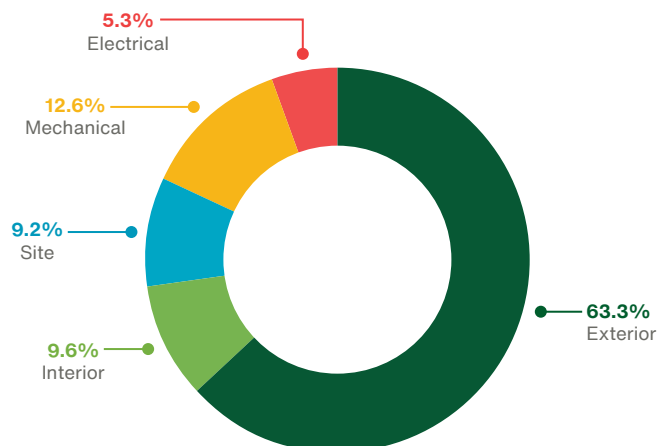
3400 Royce Way  
Lake Oswego, OR 97034

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### WESTRIDGE ELEMENTARY SCHOOL

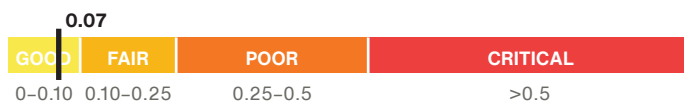
YEAR BUILT	1980
REMODELS	2020
BUILDING AREA	48,215 SF
TOTAL HEIGHT	21'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	Standing Metal Seam, Built-up
FLOOR FINISHES	Carpet Tile, VCT, Ceramic Tile, Concrete
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Metal Stud
HVAC TYPE	AHU with VAV TU

### FACILITY REPAIR COST ALLOCATION



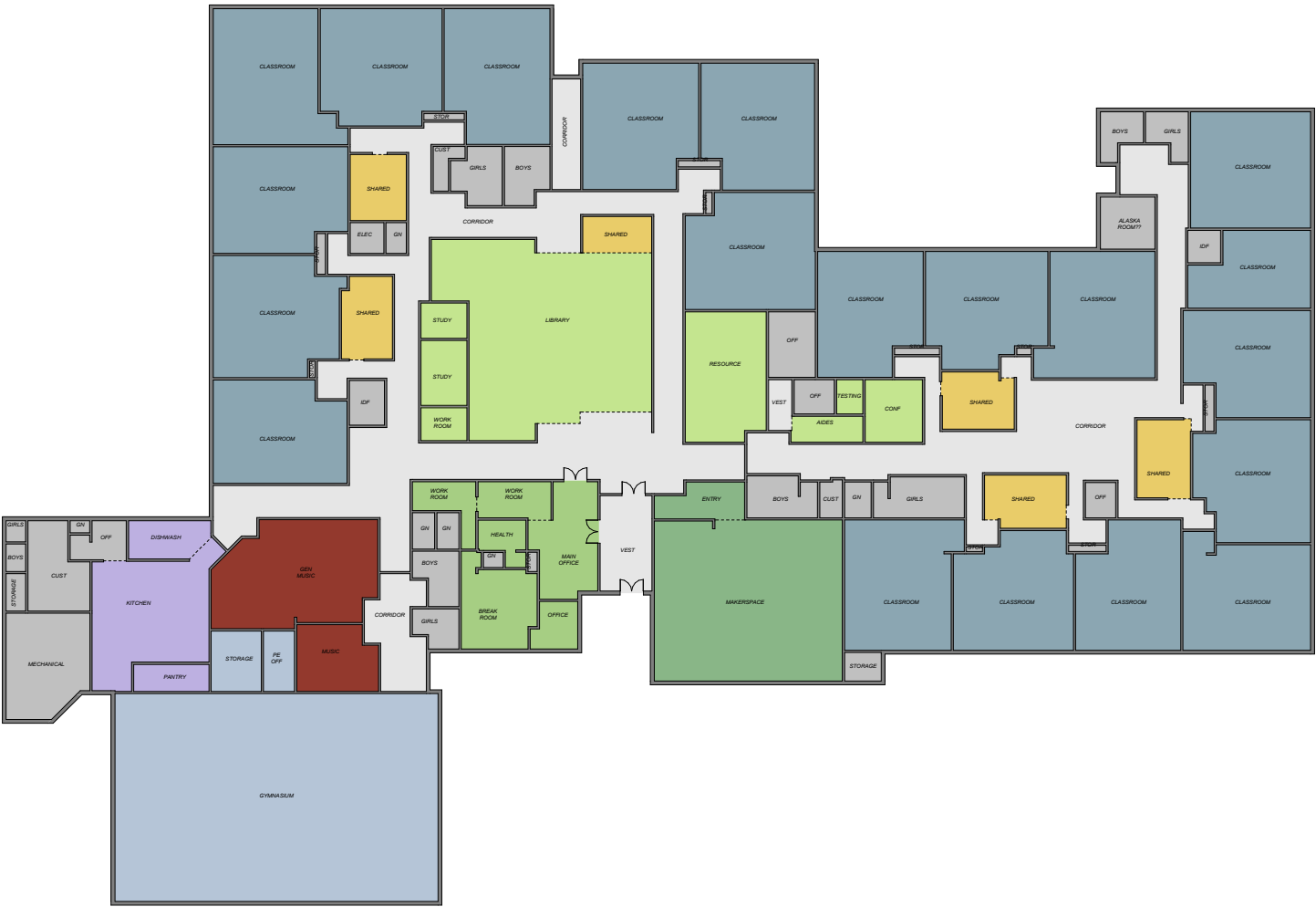
Repair costs totaling less than 0.1% are not included.

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

DRAWINGS



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
None at this time.							
TOTAL COST			\$0				
Architectural Exterior							
Replace all exterior brick veneer not replaced in 2020 renovation	20000	sf	\$50.00	\$1,000,000	X		
Re-key exterior doors	36	ea	\$200.00	\$7,200	X		
TOTAL COST			\$1,007,200				
Architectural Interior							
Replace carpet in all classrooms	21057	sf	\$7.25	\$152,663			X
TOTAL COST			\$152,663				
Site							
Repave parking lot	38500	sf	\$3.73	\$143,555		X	
Re-stripe parking lot	38500	sf	\$0.06	\$2,393		X	
TOTAL COST			\$145,948				
Structural							
None at this time.							
TOTAL COST			\$0				
Mechanical							
Ongoing Mechanical System Upgrades Allowance	1		200000	\$200,000		X	
TOTAL COST			\$200,000				
Electrical							
Upgrade fire alarm system	48215	sf	\$1.75	\$84,376		X	
TOTAL COST			\$84,376				
Plumbing							
None at this time.							
TOTAL COST			\$0				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$1,590,187  
TOTAL COST TO REPLACE \$21,696,750  
=FCI **0.073291485**

I Priority Cost: \$ 1,007,200.00  
II Priority Cost: \$ 430,323.78  
III Priority Cost: \$ 152,663.25  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.



# LAKE OSWEGO JUNIOR HIGH SCHOOL

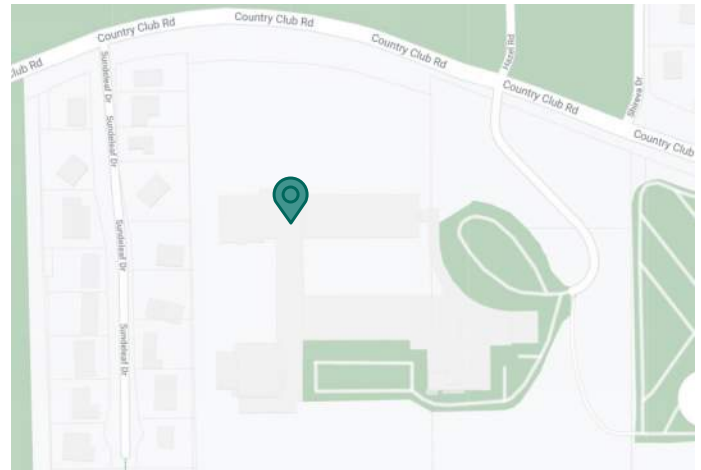
## FACT SHEET



Lake Oswego Junior High's current enrollment is approximately 920 students from sixth through eighth grades. The school has two main classroom wings that are anchored by the cafeteria and gymnasium.

All ballast roofs on the building should be replaced with SBS built-up roofing. The TPO roofing needs to be repaired and re-sloped throughout. Extensive mechanical reports are required.

New gymnasium constructed 2020.



2500 Country Club Road  
Lake Oswego, OR 9703

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### LAKE OSWEGO JUNIOR HIGH SCHOOL

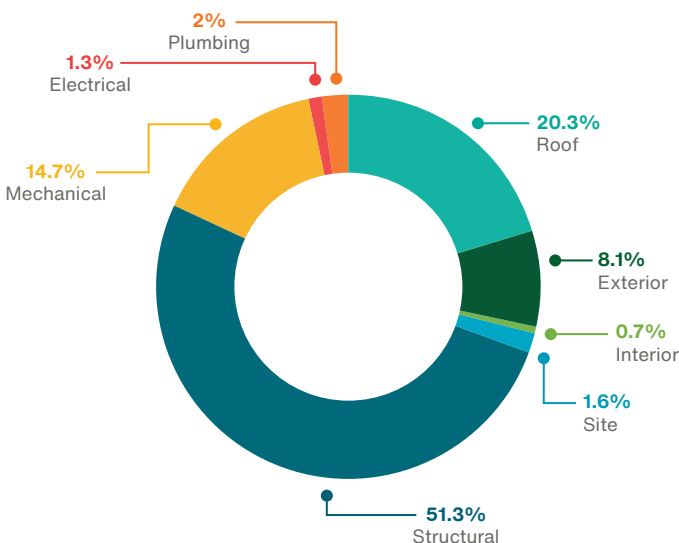
YEAR BUILT	1957
REMODELS	1990, 2013, 2020
BUILDING AREA	106,093 SF
TOTAL HEIGHT	25'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	TPO, Ballast
FLOOR FINISHES	Carpet Tile, VCT, Polished Concrete
CEILING FINISHES	ACT, Gyp. Board, Plaster, Wood Panel
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Unit Ventilators in Classrooms, Constant Volume AHU in Common Spaces

### FACILITY CONDITION INDEX

GOOD	FAIR	POOR	CRITICAL
0-0.10	0.10-0.25	0.25-0.5	>0.5

FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

## DRAWINGS



## COST ESTIMATE SUMMARY AND FCI

				PRIORITY			
RECOMMENDATIONS	QUANTITY	UNIT COST	COST	I	II	III	IV
Architectural Roof							
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacemenet due to seismic rehabilitation work	135082	sf	\$24.86	\$3,357,868		X	
Rebuild awning structure over door	200	sf	\$24.86	\$4,972		X	
Provide fall protection, assume post & cable system	1	ls	\$31,072.50	\$31,073	X		
TOTAL COST				\$3,393,912			
Architectural Exterior							
Replace single pane aluminum windows (4'x7')	290	ea	\$1,864.35	\$540,662			X
Replace existing exterior glazing with security glazing	4940	sf	\$150.00	\$741,000		X	
Re-key exterior doors	19	ea	\$200.00	\$3,800		X	
Provide window sill and head flashing	1160	lf	\$24.86	\$28,835		X	
Replace wood soffit	605	sf	\$24.86	\$15,039			X
Replace downspouts	3	ea	\$248.58	\$746			X
Clean out brick weeps	866	lf	\$12.43	\$10,764			X
Repair underground tunnel access concrete curb and door (5'x5')	8	ea	\$2,485.80	\$19,886		X	
TOTAL COST				\$1,360,732			
Architectural Interior							
Replace VCT flooring; new rubber base to match (E)	2870	sf	\$5.59	\$16,052			X
Replace sheet flooring; new rubber base to match (E)	3790	sf	\$9.94	\$37,685			X
Replace tectum ceiling tile	3170	sf	\$11.19	\$35,460			X
Repaint gyp board ceiling	4850	sf	\$1.49	\$7,234			X
Repair damaged wood casework	70	lf	\$186.44	\$13,050			X
Replace wall protection panels	310	sf	\$9.94	\$3,082			X
Replace handrail	10	lf	\$49.72	\$497		X	
TOTAL COST				\$113,060			
Site							
Slope site away from building	450	sf	\$3.73	\$1,678		X	
Repave parking lot	69300	sf	\$3.73	\$258,399		X	
Re-stripe parking lot	69300	sf	\$0.06	\$4,307		X	
TOTAL COST				\$264,383			
Structural							
Seismic Rehabilitation work as the sole building upgrade (does not include costs for re-roofing)	116032	sf	\$62.15	\$7,210,809		X	
Seismic rehabilitation work in the gym as the sole building upgrade (not including costs for re-roofing)	19050	sf	\$68.36	\$1,302,248		X	
Clean and paint corrugated metal deck	3000	sf	\$18.64	\$55,931		X	
TOTAL COST				\$8,568,988			

RECOMMENDATIONS				PRIORITY			
	QUANTITY	UNIT COST	COST	I	II	III	IV
<b>Mechanical</b>							
Replace 1.5 ton window AC, replace with ductless split systems	4	ea	\$4,101.57	\$16,406	X		
Replace steam fin tube radiator, reuse new DDC control valve, 42 fl	1	ea	\$5,593.05	\$5,593	X		
Replace 1250 CFM steam unit ventilator, reuse DDC controls	9	ea	\$11,186.10	\$100,675	X		
Replace 1000 CFM steam unit ventilator, reuse DDC controls	27	ea	\$9,943.20	\$268,466	X		
Replace 3 Ton - Packaged Roof Top - DX and Gas AHU, reuse ductwork	2	ea	\$9,943.20	\$19,886	X		
Replace roof top centrifugal exhaust fan, add DDC on/off control	11	ea	\$22,372.20	\$246,094	X		
Replace 1800 CFM - Heating Ventilator - Steam Coil AHU	1	ea	\$14,914.80	\$14,915	X		
Replace 4600 CFM - Heating Ventilator - Steam Coil AHU	1	ea	\$38,529.90	\$38,530	X		
Replace 10,000 CFM - Heating Ventilator - Steam Coil AHU, overhaul with new dampers and heating coil	1	ea	\$77,059.80	\$77,060	X		
Replace 7,000 CFM - Heating Ventilator - Steam Coil AHU, overhaul with new dampers and heating coil	1	ea	\$50,958.90	\$50,959	X		
Replace 6,500 CFM - Heating Ventilator - Steam Coil AHU, overhaul with new dampers and heating coil	1	ea	\$44,744.40	\$44,744	X		
Replace 500 CFM - Heating Ventilator - Steam Coil AHU	1	ea	\$4,598.73	\$4,599	X		
Replace carbon steel steam distribution pipe, update to hot water piping	2500	lf	\$68.36	\$170,899	X		
Replaced steam-gas fired boiler B-1, replace with hot water boiler	1	ea	\$82,031.40	\$82,031	X		
Replaced steam-gas fired boiler B-2, replace with hot water boiler	1	ea	\$82,031.40	\$82,031	X		
Replace DX-split kitchen cooler	2	ea	\$4,225.86	\$8,452	X		
Repair metal duct air distribution	30	lf	\$43.50	\$1,305	X		
Replace belt on new exhaust fans installed in 2012	2	ea	\$435.02	\$870	X		
Ongoing Mechanical System Upgrades Allowance	1		\$1,200,000.00	\$1,200,000	X		
Architectural Finishes Allowance	1	ls	\$18,643.50	\$18,644	X		
			<b>TOTAL COST</b>	<b>\$2,452,160</b>			

<b>Electrical</b>							
Replace 1520A - 120/208V Switchgear	1	ea	\$14,666.22	\$14,666	X		
Replace distribution panel from former shop equip panel	1	ea	\$8,576.01	\$8,576	X		
Add surge protection at main distribution panel	1	ea	\$1,367.19	\$1,367	X		
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	116032	sf	\$1.75	\$203,056	X		
			<b>TOTAL COST</b>	<b>\$227,665</b>			

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Plumbing							
Repair 100 gal gas water heater: add seismic bracing	1	ea	\$2,361.51	\$2,362		X	
Replace 80 gal gas water heater	1	ea	\$3,977.28	\$3,977		X	
Replace galvanized domestic piping	3000	lf	\$74.57	\$223,722		X	
Repair wall hung lavatories, update fixture to 0.5 gpm	17	ea	\$1,988.64	\$33,807		X	
Replace floor mounted toilet, update to 1.6 gpf standard	25	ea	\$1,988.64	\$49,716		X	
Replace floor mounted urinals, update to 1 gpf standard	1	ea	\$1,988.64	\$1,989		X	
Architectural Finishes Allowance	1	ls	\$12,429.00	\$12,429		X	
			TOTAL COST	\$328,001			

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR      \$16,708,902  
TOTAL COST TO REPLACE      \$56,275,520  
=FCI      **0.296912437**

I Priority Cost:    \$ 1,231,072.50  
II Priority Cost:    \$ 14,798,056.22  
III Priority Cost:    \$ 679,773.08  
IV Priority Cost:    \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

Constructed in 1956 and remodeled in 1957 and 1990. Wood framing with CMU with little reinforcement and concrete columns at gym. Tectum panel diaphragm at gym and straight sheathing diaphragms elsewhere.

Building Risk Category III

ASCE 41-13 Immediate Occupancy Performance Level for gym portion

ASCE 41-13 Life Safety Performance Level for main building

### Main Building Seismic Retrofit Cost Per Square Foot

\$50/sf (does not include costs for re-roofing)

### Gymnasium Building Seismic Retrofit Cost Per Square Foot

\$55/sf (does not include costs for re-roofing)

### Summary of Seismic Structural Deficiencies (included in cost per square foot above)

- Reinforcing steel — there is not adequate reinforcing steel in the masonry shear walls in the gym for in-plane or out-of-plane forces
- Masonry shear stress check — likely not compliant for gym shear walls
- Wall anchorage — the exterior masonry shear walls in the gym are not adequately braced for out-of-plane forces at each floor level
- Interior wood walls in the main building do not include wood structural panels or shear wall hold-downs
- Wood structural panel diaphragms need to be installed throughout the structure in place of straight sheathing and Tectum panels
- Diaphragm chords and collectors should be added
- Corrugated metal in east and west walls of gym should be replaced with CMU infill

### Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)

- Sprinkler ceiling clearance — penetrations through panelized ceilings do not have appropriate clearances
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — Equipment weighing more than 20 pounds whose center of mass is above four feet is not braced
- Edge clearance for ceilings — free edges of suspended ceilings do not have a 3/4 inch clearance between the ceiling and the adjacent wall
- Edge support for ceilings — free edges of suspended ceilings are not supported by two inch wide closure angles
- One exterior canopy outside of the cafeteria should be replaced
- There is an unreinforced masonry chimney on the roof above the cafeteria that should be removed



**Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)**

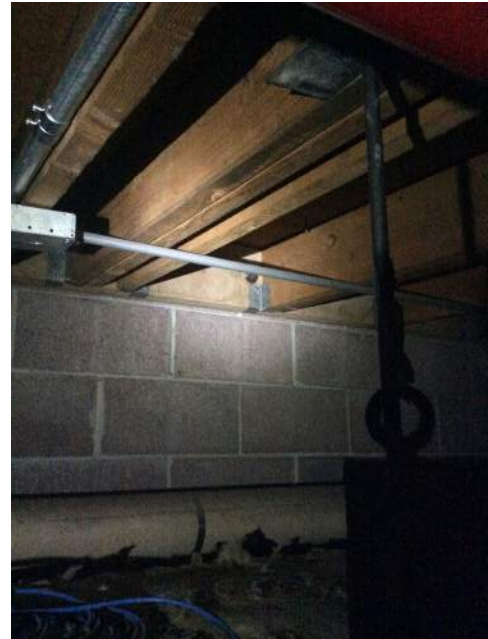
The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation. See the plans with field notes for more information.

- Cracking in concrete slab in the kitchen. This does not appear to be an immediate structural concern. The crack is less than 8 feet in length.
- Corrugated metal deck forms above the mechanical access tunnels under the building in some locations show rust and deterioration. The floor slabs should be verified to confirm the deck is not needed structurally to span tunnel and the metal should be cleaned and painted. Assume 3000 sq ft of floor needs repair at \$15/sq ft.

## PHOTO OF DEFICIENCIES



CANOPY TO BE REMOVED



INADEQUATE DIAPHRAGM CONNECTION



FALL PRONE CONTENTS



INADEQUATE JOIST CONNECTION

**PHOTO OF DEFICIENCIES (CONTINUED)**

REMOVE STRAIGHT SHEATHING



TANK TO BE BRACED FROM WALL

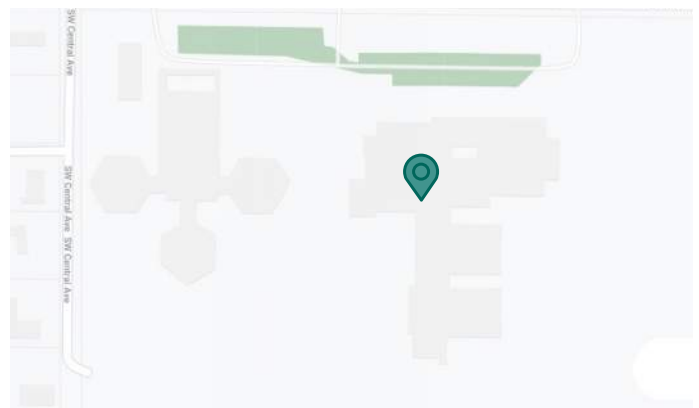
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# LAKERIDGE MIDDLE SCHOOL

## FACT SHEET



The original Lakeridge Middle School has been demolished and a new school has been constructed and completed in 2020. This facility conditions assessment does not include an assessment of the new building.



4700 Jean Road  
Lake Oswego, OR 97035

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### LAKERIDGE MIDDLE SCHOOL

YEAR BUILT	2020
REMODELS	N/A
BUILDING AREA	
TOTAL HEIGHT	
NUMBER OF FLOORS	2
OCCUPANCY	E-1
PRIMARY STRUCTURE	CMU Shear Wall, Wood Frame
ROOF TYPE	TPO, Standing Metal Seam
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Multi-Zone AHU

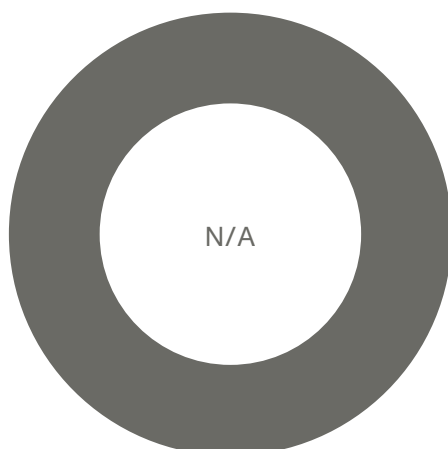
### FACILITY CONDITION INDEX

N/A

GOOD	FAIR	POOR	CRITICAL
0-0.10	0.10-0.25	0.25-0.5	>0.5

FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



## DRAWINGS



First floor





Second floor

## COST ESTIMATE SUMMARY AND FCI

Lakeridge Middle School is in the process of being rebuilt (as of June 2020).

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
None at this time.							
TOTAL COST			\$0				
Architectural Exterior							
None at this time.							
TOTAL COST			\$0				
Architectural Interior							
None at this time.							
TOTAL COST			\$0				
Site							
None at this time.							
TOTAL COST			\$0				
Structural							
None at this time.							
TOTAL COST			\$0				
Mechanical							
None at this time.							
TOTAL COST			\$0				
Electrical							
None at this time.							
TOTAL COST			\$0				
Plumbing							
None at this time.							
TOTAL COST			\$0				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR	\$0
TOTAL COST TO REPLACE	\$ -
=FCI	N/A

I Priority Cost:	\$ -
II Priority Cost:	\$ -
III Priority Cost:	\$ -
IV Priority Cost:	\$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

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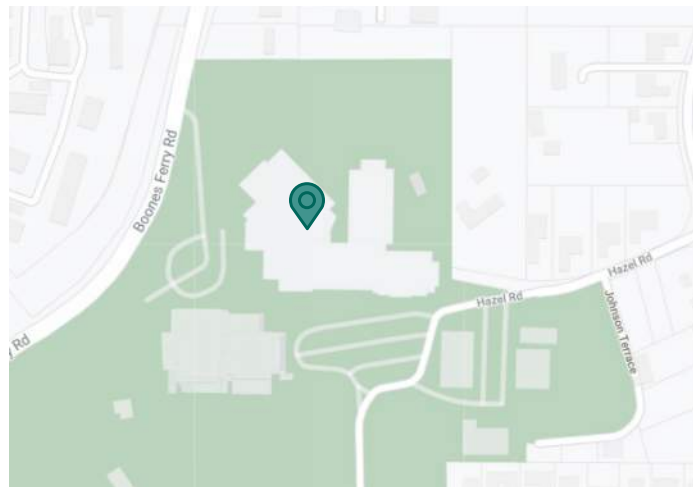
LAKE OSWEGO  
HIGH SCHOOL

## FACT SHEET



Lake Oswego High School population is 1,340 students from ninth to twelfth grades.

Renovations for this school are planned for 2021. Renovations to include deferred maintenance, safety and security improvements, innovation space, and seismic upgrades. Upgrades are anticipated to address about one-third of the estimated costs of the recommendations.



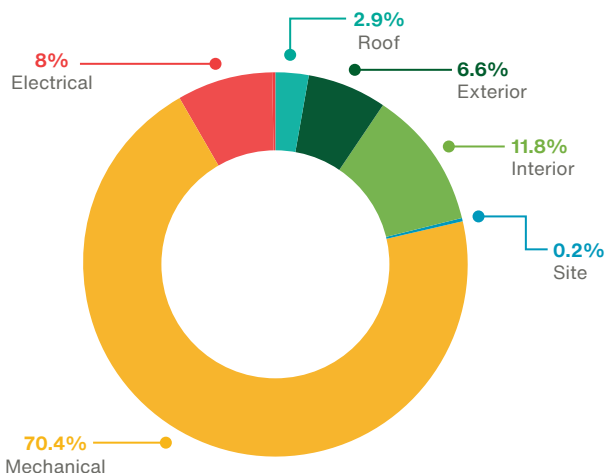
2501 Country Club Road  
Lake Oswego, OR 97034

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## LAKE OSWEGO HIGH SCHOOL

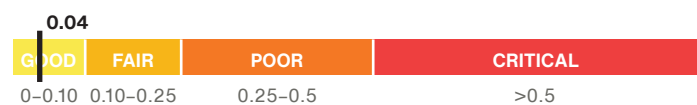
YEAR BUILT	2005 (Old Gym: 1961)
REMODELS	2010 (Old Gym: 2004)
BUILDING AREA	259,682 SF
TOTAL HEIGHT	62'
NUMBER OF FLOORS	3
OCCUPANCY	A-2, A-2.1, A-3, B, E-1
PRIMARY STRUCTURE	Steel Frame
ROOF TYPE	TPO, Standing Metal Seam
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board, Plaster, Wood Panel
PARTITION TYPE	Gyp. Board over Metal Stud
HVAC TYPE	AHU with VAV TU

## FACILITY REPAIR COST ALLOCATION



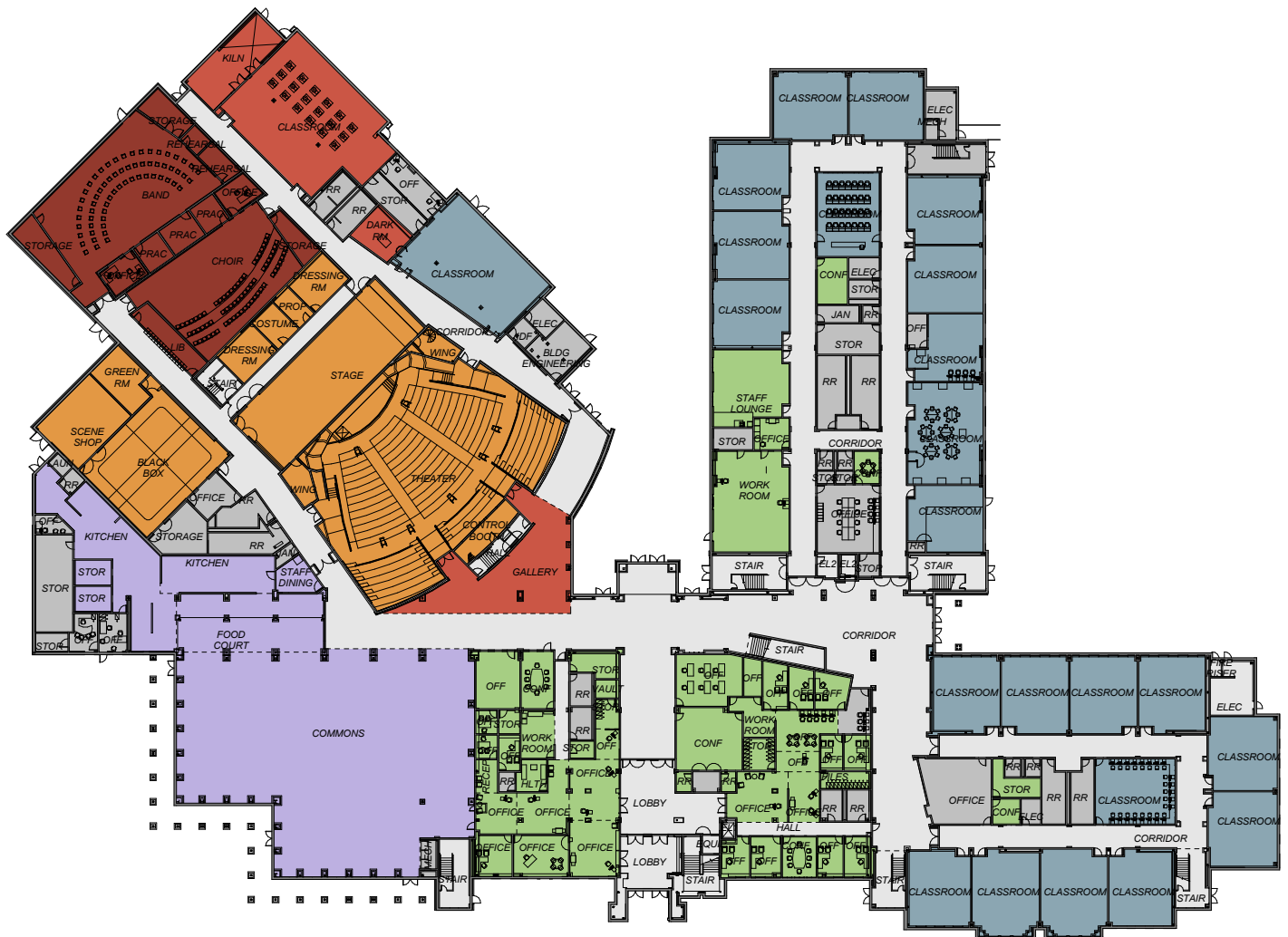
Repair costs totaling less than 0.1% are not included.

## FACILITY CONDITION INDEX



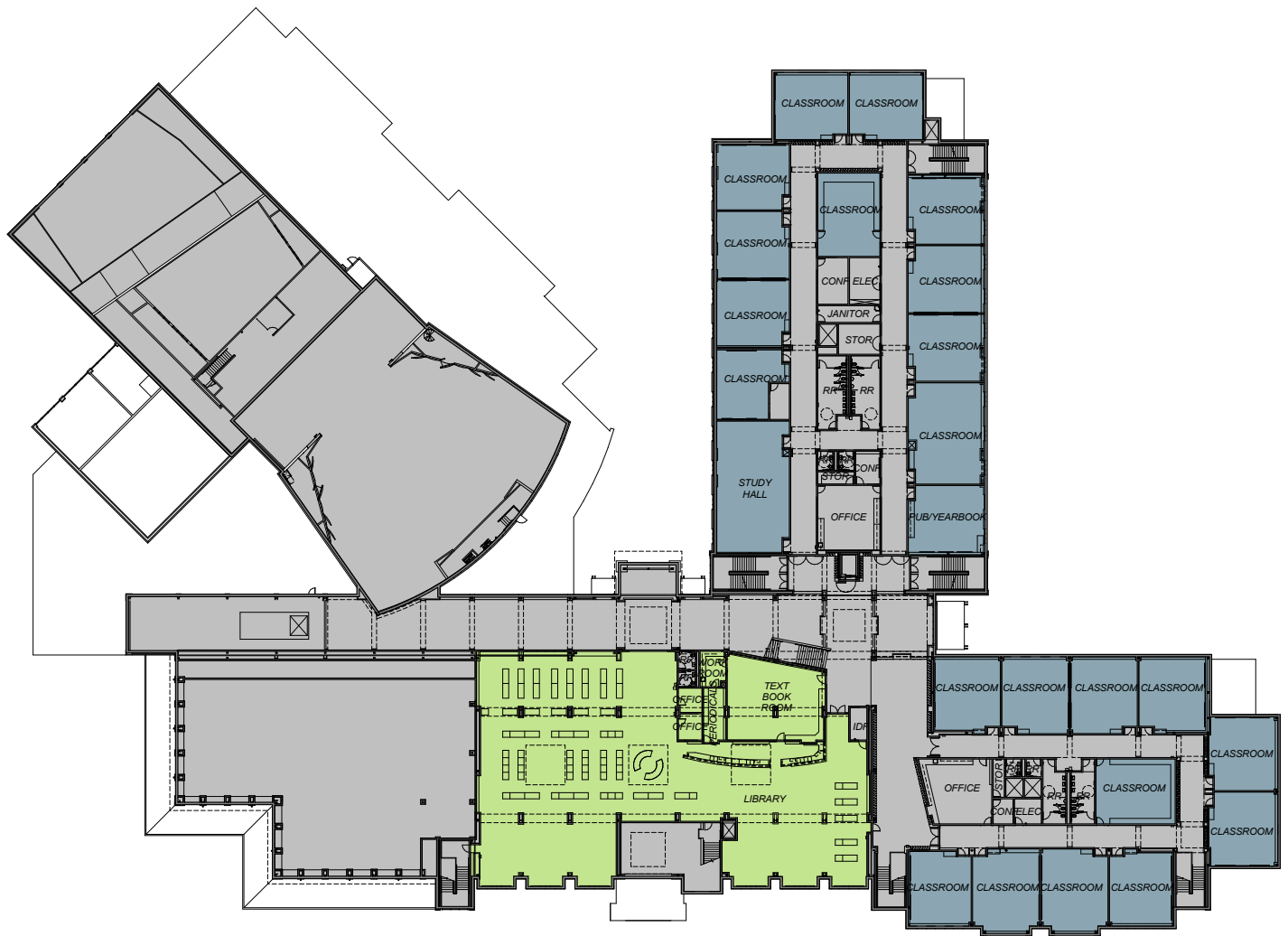
FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

## DRAWINGS

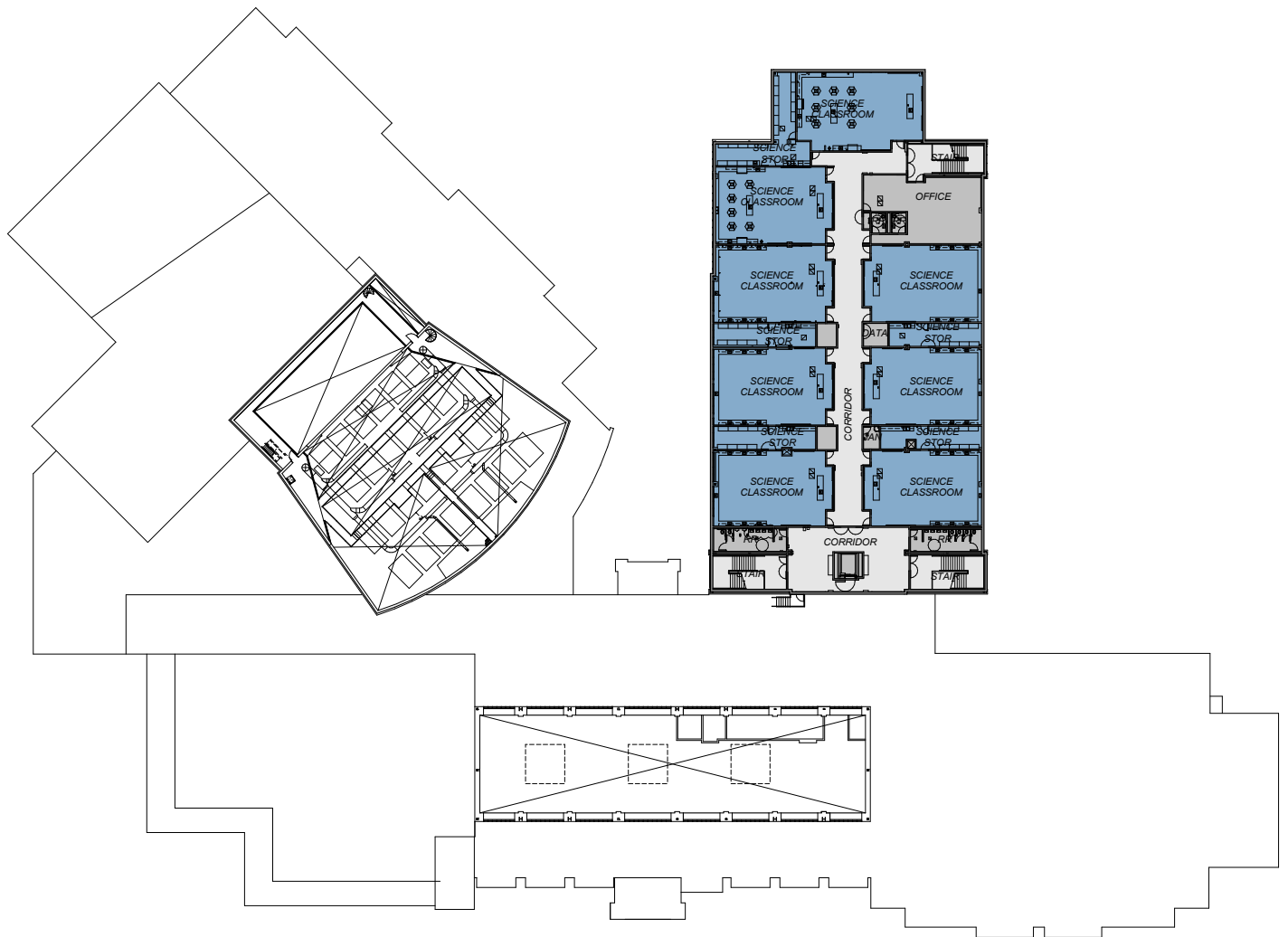


First floor

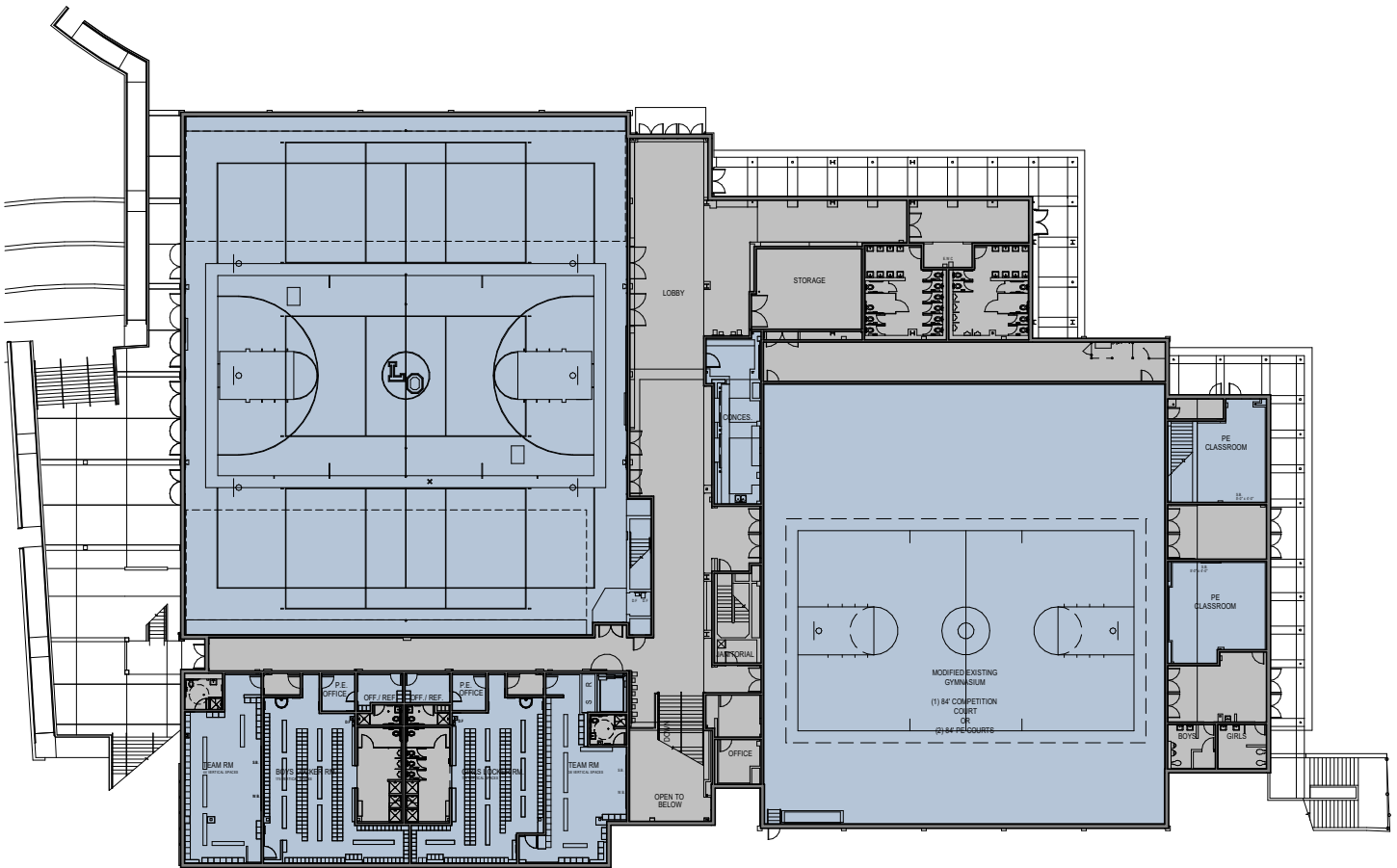




Second floor



Third floor



## Athletics Complex

## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Main Building							
Repair wall mounted seismic joint and associated roofing per line type	4215	lf	\$22.37	\$94,299		X	
Clean out gutter	74	lf	\$8.70	\$644		X	
Clean drains	36	ea	\$248.58	\$8,949		X	
Replace roof drains	2	ea	\$1,491.48	\$2,983		X	
Replace roofing in roof drain sump	455	sf	\$24.86	\$11,310		X	
Provide reglet flashing	16	lf	\$14.91	\$239		X	
Replace scupper flashing	3	ea	\$621.45	\$1,864		X	
Replace corroded chains at roof hatch guardrails	2	ea	\$248.58	\$497		X	
Replace skylight curbs for skylights slope to drain	40	lf	\$49.72	\$1,989		X	
Raise curb behind skylight 8"; add reglet flashing and counter flashing over adjacent skylight curb	20	lf	\$62.15	\$1,243		X	
Reinstall conduit in metal sleeves and installed on 8" high PT blocks	400	lf	\$49.72	\$19,886		X	
Infill 8" deep trough, apply roofing and extend roof drains to roof surface and install drain bowls	140	sf	\$62.15	\$8,700		X	
Repair wall mounted seismic joint and associate roofing per line drain	290	lf	\$31.07	\$9,011		X	
Replace sheet metal trough between metal roofs, slope to drain	82	sf	\$24.86	\$2,038		X	
Install new wall mounted ladder	1	ea	\$3,107.25	\$3,107	X		
Athletics							
Move concrete pavers away from edge	165	lf	\$12.43	\$2,051			X
Clean out gutter	380	lf	\$8.70	\$3,306		X	
TOTAL COST				\$172,117			

RECOMMENDATIONS	QUANTITY	UNIT	COST	COST	PRIORITY			
					I	II	III	IV
Architectural Exterior								
Athletics								
Replace glazing with secure glass on first floor windows.	1850	sf	\$150.00	\$277,500		X		
Repaint HM door and frame	48	ea	\$155.36	\$7,457			X	
Repair damaged HM door	1	ea	\$1,242.90	\$1,243		X		
Repair damaged storefront doors	4	ea	\$1,242.90	\$4,972		X		
Remove peeling paint and repaint all exterior guard rails and railings	1170	lf	\$9.94	\$11,634			X	
Clean rust and paint exterior staircase (2 stories tall, 5' wide, one landing)	1	ea	\$1,864.35	\$1,864		X		
Replace gutter	140	lf	\$19.89	\$2,784		X		
Install window head flashing	12	lf	\$24.86	\$298		X		
Clean rust and repaint metal awning	250	sf	\$7.46	\$1,864		X		
Patch concrete pilaster base	4	sf	\$93.22	\$373			X	
Clean and paint stucco soffit	1000	sf	\$2.49	\$2,486			X	
Replace flashing (outside wrestling)	45	lf	\$22.37	\$1,007		X		
Provide Kalwall flashing on all side of opening of CMU wall	70	lf	\$24.86	\$1,740		X		
Replace control joint caulk, provide continuous line	30	lf	\$18.64	\$559		X		
Replace HM door and frame	1	ea	\$2,237.22	\$2,237		X		
Repair storefront mullion	1	ea	\$621.45	\$621		X		
Replace stucco wall	32	sf	\$37.29	\$1,193		X		
Main Building								
Clean precast fascia	4215	lf	\$12.43	\$52,388			X	
Fix leaking gutters seams/welds	4	lf	\$62.15	\$249		X		
Fix leaking downspouts	2	ea	\$248.58	\$497		X		
Replace wood fascia boards	30	lf	\$2.49	\$75			X	
Repair damaged flashing	217	lf	\$24.86	\$5,394			X	
Patch and paint stucco soffit (water damage)	650	sf	\$12.43	\$8,079			X	
Remove peeling paint and repaint all exterior guard rails and railings	214	lf	\$9.94	\$2,128			X	
Patch cracked chipped concrete column base (4" tall)	1	ea	\$621.45	\$621			X	
Clean and paint canopy structure and lintel in wall (canopy size: 6'-6" x 13'-0")	3	ea	\$497.16	\$1,491			X	
Replace dented corrugated metal panel	40	sf	\$18.64	\$746			X	
Replace metal fascia trim (12" tall)	8	lf	\$31.07	\$249			X	
Replace window gasket, 4' long	2	ea	\$124.29	\$249		X		
Replace precast concrete wall cap to cover brick wall	28	lf	\$62.15	\$1,740		X		
Replace mortar in brick along reglet flashing (roof plan west)	44	lf	\$31.07	\$1,367		X		
Remove patched sealant at wall tile (roof plan west)	1600	sf	\$2.49	\$3,977			X	
			TOTAL COST	\$399,083				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY			
				I	II	III	IV
Architectural Interior							
Athletics							
Replace carpet tile; install new rubber base	536	lf	\$8.70	\$4,663			X
Resurface flooring	4890	sf	\$3.73	\$18,233			X
Replace sheet flooring; new rubber base to match (E)	32	sf	\$9.94	\$318			X
Install transition strip	9	lf	\$6.21	\$56			X
Repaint wall	16070	sf	\$1.24	\$19,973			X
Patch and repaint gypsum plaster wall	730	sf	\$2.49	\$1,815			X
Replace 1x1 glue-on ceiling tile	500	sf	\$8.70	\$4,350			X
Replace 2x4 lay-in ceiling tile	368	sf	\$9.94	\$3,659			X
Repaint gyp board ceiling	1000	sf	\$1.49	\$1,491			X
Repaint steel handrail	0	lf	\$6.21	\$0			X
Repaint HM door and frame	0	ea	\$186.44	\$0			X
Replace bleachers in gym	1	ea	\$285,000.00	\$285,000		X	
Repaint toilet stall partition door	8	ea	\$62.15	\$497			X
Main Building							
Replace carpet tile; install new rubber base	22809	sf	\$8.70	\$198,445			X
Replace sheet flooring; new rubber base to match (E)	15	sf	\$9.94	\$149			X
Refinish sheet flooring	200	sf	\$3.73	\$746			X
Replace VCT flooring; new rubber base to match (E)	1257	sf	\$5.59	\$7,030			X
Repair damaged weld rod	21	lf	\$12.43	\$261		X	
Replace damage cove base	1	lf	\$24.86	\$25		X	
Install transition strip	9	lf	\$6.21	\$56			X
Repaint stage floor	4750	sf	\$1.24	\$5,904			X
Repaint wall	41173	sf	\$1.24	\$51,174			X
Patch and repaint gypsum plaster wall	4057	sf	\$2.49	\$10,085			X
Replace damaged 4'x8' fabric wrapped acoustical wall panel	8	ea	\$745.74	\$5,966			X
Replace 2x4 lay-in ceiling tile	1080	sf	\$9.94	\$10,739			X
Replace 2x2 glue-on ceiling tile	188	sf	\$8.70	\$1,636			X
Repair damaged spray-applied fireproofing to ceiling	20	sf	\$12.43	\$249		X	
Repaint toilet stall partition door	9	ea	\$62.15	\$559			X
Repair damaged wood paneling	570	sf	\$24.86	\$14,169			X
Repair damaged wood trim	4	lf	\$18.64	\$75			X
Repair damaged 4'x4' wood orchestra pit divider	5	ea	\$310.73	\$1,554			X
Repair damaged wood door	28	ea	\$870.03	\$24,361			X
Repaint door frame	217	ea	\$93.22	\$20,228			X
Replace door knob with lever	1	ea	\$621.45	\$621			X
Repaint steel handrail	90	lf	\$6.21	\$559			X
Repaint damaged p-lam countertop	46	sf	\$37.29	\$1,715			X
Replace 2x4 light cover	2	ea	\$62.15	\$124			X
Replace damaged whiteboard	1	ea	\$621.45	\$621			X
Replace broken light switch	1	ea	\$62.15	\$62			X
Replace wood door	2	ea	\$1,740.06	\$3,480			X
Replace broken single-pane glass	16	sf	\$31.07	\$497			X
TOTAL COST			\$701,147				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY				
				I	II	III	IV	
Site								
Clean and repaint stairs	300	sf	\$6.21	\$1,864			X	
Repaint guardrails and handrails	214	lf	\$9.94	\$2,128			X	
Repair concrete steps	30	sf	\$62.15	\$1,864			X	
TOTAL COST				\$5,857				

<b>Structural</b>								
Cracking in concrete slab in stair towers observed, patch	50	sf	\$12.43	\$621		X		
<b>TOTAL COST</b>				<b>\$621</b>				

<b>Mechanical</b>								
Repair 2K MBH condensing hot water boiler: replace piping	20	lf	\$54.38	\$1,088		X		
Repair roof top AHU: clean and paint exterior of unit	10	ea	\$5,593.05	\$55,931		X		
Ongoing Mechanical System Upgrades Allowance	1		\$3,110,000.00	\$3,110,000		X		
Ongoing Mechanical System Upgrades Allowance	1		\$1,000,000.00	\$1,000,000	X			
Architectural Finishes Allowance	1	ls	\$2,485.80	\$2,486		X		
<b>TOTAL COST</b>				<b>\$4,169,504</b>				

<b>Electrical</b>								
Replace distribution panels in gym	2	ea	\$8,576.01	\$17,152		X		
Repair main electrical gear: Add drip pan	1	ea	\$1,677.92	\$1,678		X		
Architectural Finishes Allowance	1	ls	\$621.45	\$621		X		
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	259682	sf	\$1.75	\$454,444		X		
<b>TOTAL COST</b>				<b>\$473,895</b>				

<b>Plumbing</b>								
Repair drinking fountain, hot water discharging at drinking fountain	1	ea	\$1,367.19	\$1,367		X		
<b>TOTAL COST</b>				<b>\$1,367</b>				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$5,923,591  
 TOTAL COST TO REPLACE \$132,437,820  
 =FCI **0.044727336**

I Priority Cost: \$ 1,003,107.25  
 II Priority Cost: \$ 4,399,865.70  
 III Priority Cost: \$ 520,617.87  
 IV Priority Cost: \$ -



## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

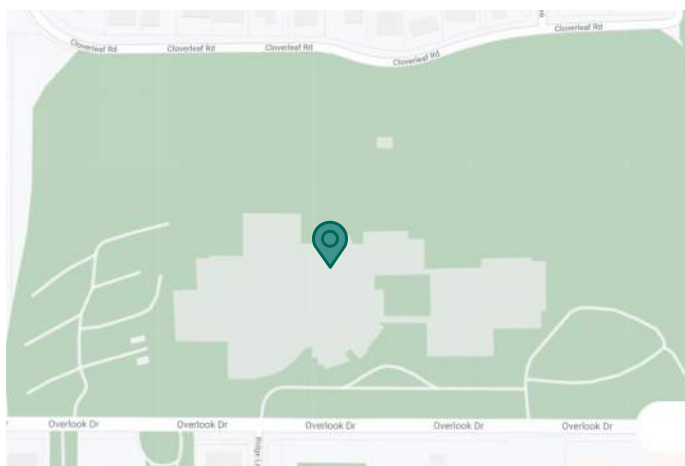
# LAKERIDGE HIGH SCHOOL

## FACT SHEET



Lakeridge High School serves 1,151 students from ninth to twelfth grades.

Renovations for this school are planned for 2021. Renovations to include deferred maintenance, safety and security improvements, innovation space, and seismic upgrades. Upgrades are anticipated to address about one-third of the estimated costs of the recommendations.



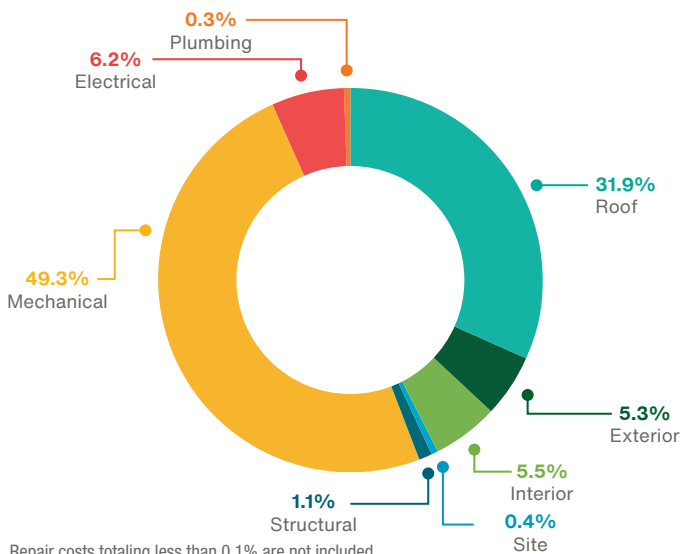
1234 Overlook Drive  
Lake Oswego, OR 97034

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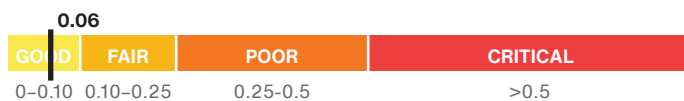
### LAKERIDGE HIGH SCHOOL

YEAR BUILT	1970
REMODELS	1990, 2004
BUILDING AREA	278,300 SF
TOTAL HEIGHT	54'
NUMBER OF FLOORS	3
OCCUPANCY	A-2, A-2.1, A-3, E-1
PRIMARY STRUCTURE	Wood Frame, Steel Frame
ROOF TYPE	TPO, Standing Metal Seam
FLOOR FINISHES	Polished Concrete, Carpet Tile
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Metal Stud
HVAC TYPE	AHU with VAV TU

### FACILITY REPAIR COST ALLOCATION

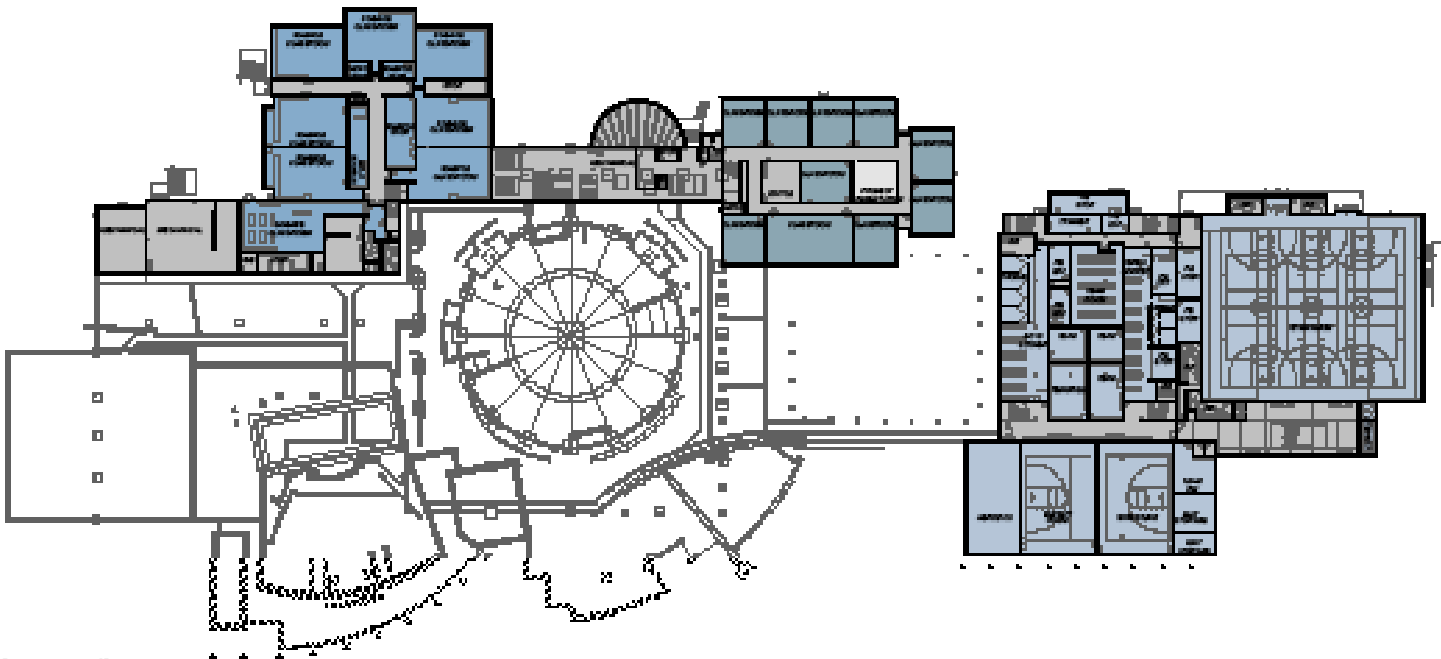


### FACILITY CONDITION INDEX

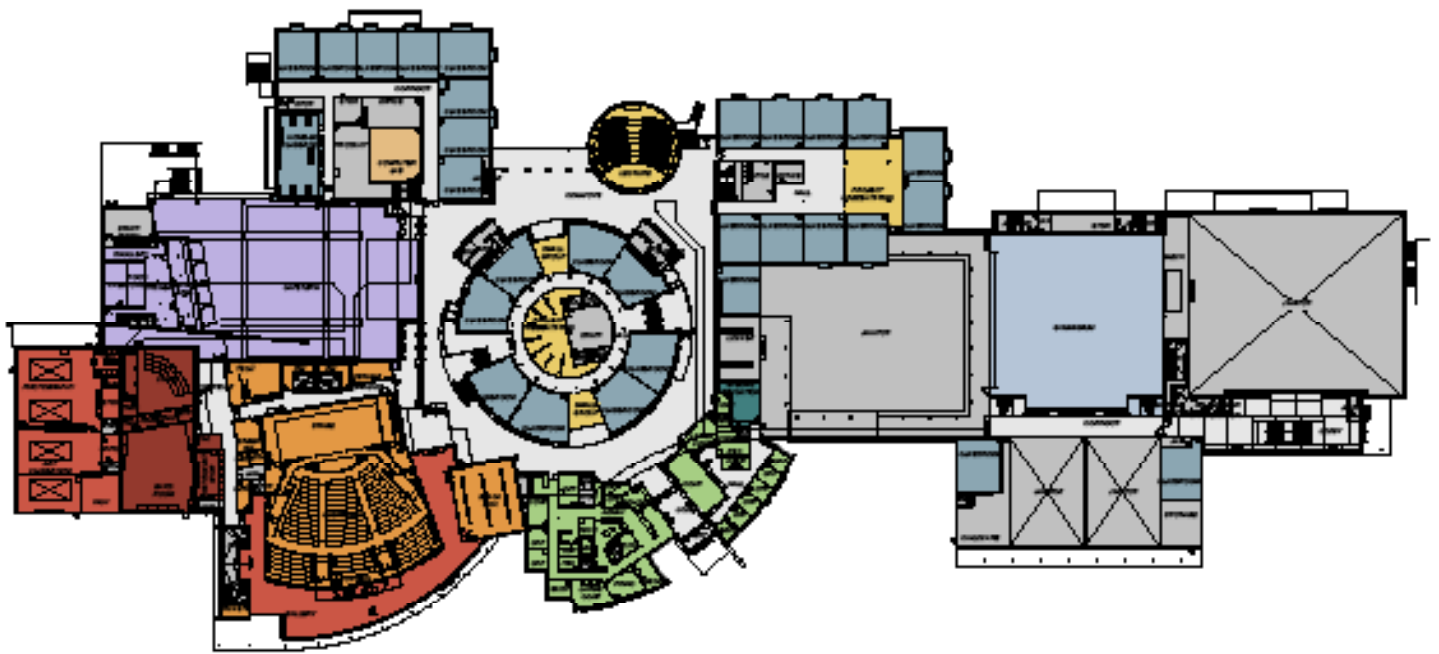


FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

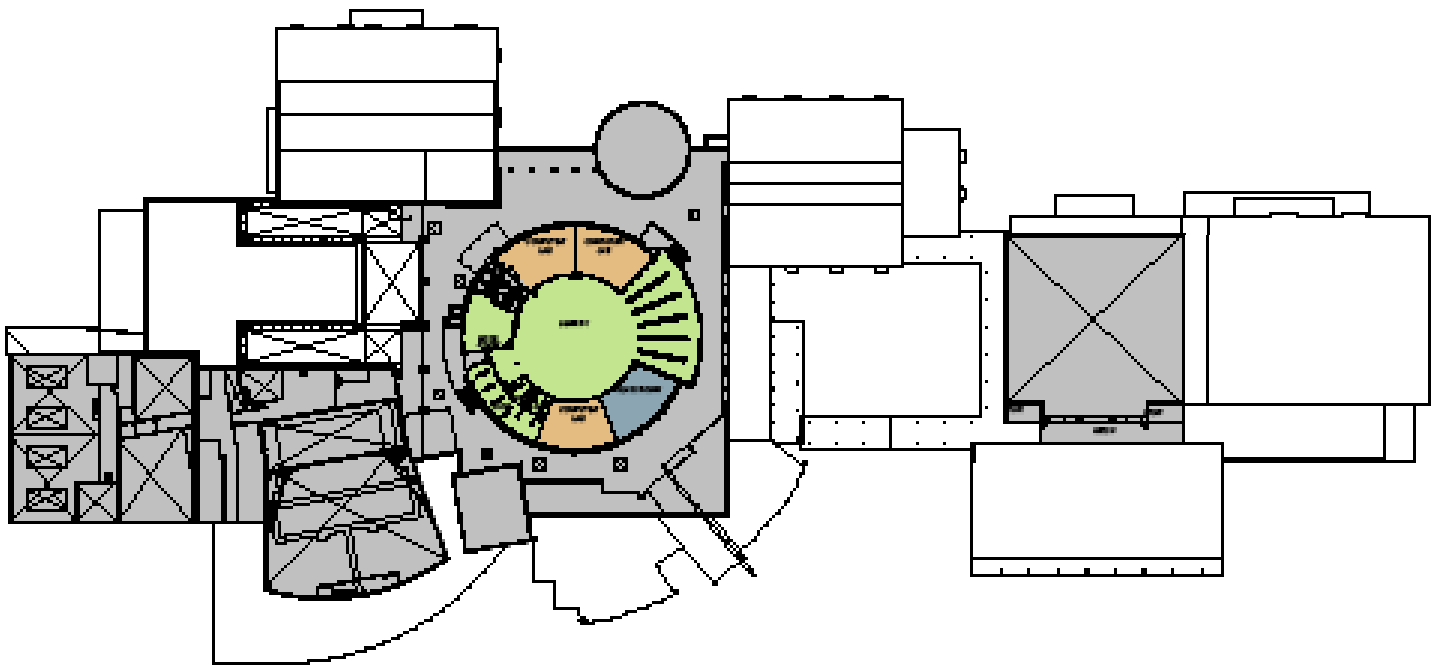
DRAWINGS



Lower floor



Ground floor



Upper floor

## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY				
				I	II	III	IV	
Architectural Roof								
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacement due to seismic rehabilitation work	107969	sf	\$24.86	\$2,683,893		X		
Provide new SBS BUR roofing and sheet metal accessories (without insulation) for covered walkways	6850	sf	\$19.89	\$136,222		X		
Clean out gutter	383	lf	\$8.70	\$3,332		X		
Repair gutter	144	lf	\$14.91	\$2,148		X		
Clean drains	39	ea	\$248.58	\$9,695		X		
Replace roof drains	2	ea	\$1,491.48	\$2,983		X		
Provide sheet metal cover over seismic joint transition	4	lf	\$31.07	\$124		X		
Install splash block	6	ea	\$93.22	\$559		X		
Remove splash block	1	ea	\$31.07	\$31			X	
Replace counter flashing	50	lf	\$22.37	\$1,119		X		
Replace reglet flashing	30	lf	\$14.91	\$447		X		
Install steel sleeve post support	1	ea	\$621.45	\$621		X		
Install new wall mounted ladder	4	ea	\$3,107.25	\$12,429	X			
Replace bellows seismic joint and associated roofing	360	lf	\$31.07	\$11,186		X		
Install new cover plate on electrical box	1	ea	\$62.15	\$62		X		
TOTAL COST			\$2,864,852					

<b>Architectural Exterior</b>								
Repair water damaged stone tiles, provide flashing	32	sf	\$49.72	\$1,591		X		
Re-key exterior doors	48	ea	\$200.00	\$9,600		X		
Replace single pane aluminum windows (8'x6')	30	ea	\$2,734.38	\$82,031			X	
Replace first floor windows with high efficiency operable security glazing	1450	sf	\$150.00	\$217,500		X		
Replace single pane storefront (66'x14')	1	ea	\$68,906.38	\$68,906			X	
Repair stucco wall at overflow scuppers	80	sf	\$18.64	\$1,491			X	
Clean and re-paint stucco wall	15300	sf	\$3.11	\$47,541			X	
Repair bay window concrete roof (9'x2'-6")	11	ea	\$745.74	\$8,203		X		
Repair wood soffit panels	128	sf	\$18.64	\$2,386			X	
Replace metal panels (4'x8')	4	ea	\$1,193.18	\$4,773			X	
Fix covered walkway column foundation – re-level, fix roof	200	sf	\$62.15	\$12,429		X		
Provide seismic joint separation to the bottom of wall	1	ls	\$621.45	\$621		X		
Provide proper flashing and enclosure at cantilevered CMU wall bottom	1	ls	\$3,107.25	\$3,107		X		
Replace leaking window, fix water damage inside	1	ls	\$6,214.50	\$6,215		X		
Repair water damaged wall	1	ls	\$9,321.75	\$9,322		X		
<b>TOTAL COST</b>				<b>\$475,717</b>				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY			
				I	II	III	IV
Architectural Interior							
Replace sheet flooring; new rubber base to match (E)	2035	sf	\$9.94	\$20,234			X
Replace carpet tile; install new rubber base	16687	sf	\$8.70	\$145,182			X
Replace ceramic floor tile; install new base	12	sf	\$29.83	\$358			X
Install transition strip	20	lf	\$6.21	\$124			X
Repaint stage floor	2650	sf	\$1.24	\$3,294			X
Repaint wall	69979	sf	\$1.24	\$86,977			X
Patch and repaint gypsum plaster wall	2924	sf	\$2.49	\$7,268			X
Replace damaged wall protection	250	sf	\$9.94	\$2,486			X
Replace 1x1 glue-on ceiling tile	707	sf	\$8.70	\$6,151			X
Replace 2x4 lay-in ceiling tile	2454	sf	\$9.94	\$24,401			X
Repaint gyp board ceiling	2010	sf	\$1.49	\$2,998			X
Repair damaged toilet stall partition	3	ea	\$621.45	\$1,864			X
Repair damaged wood paneling	384	sf	\$24.86	\$9,545			X
Replace wood window sill	60	sf	\$18.64	\$1,119			X
Repair damaged wood door	26	ea	\$870.03	\$22,621			X
Replace damaged 2x4 light cover	8	ea	\$62.15	\$497			X
Replace broken horizontal blinds	60	sf	\$8.70	\$522			X
Replace countertop	768	sf	\$74.57	\$57,273			X
Refinish concrete floor	6545	sf	\$1.86	\$12,202			X
Replace countertop with solid surface countertop (art room)	121	sf	\$87.00	\$10,527			X
Replace doors with new doors and 3mm edge banding (art room)	65	sf	\$12.43	\$808			X
Replace ceiling sheathing at roof drain (art room)	70	sf	\$12.43	\$870			X
Clean and re-point CMU wall	700	sf	\$31.07	\$21,751			X
Gym Wing							
Replace acoustical panel	32	sf	\$23.30	\$746			X
Provide ADA restroom (sink, toilet, grab bars, mirror, light, fan, all walls and finishes)	2	ea	\$24,858.00	\$49,716		X	
Replace 2x4 lay-in ceiling tile	400	sf	\$9.94	\$3,977			X
Clean and re-point CMU wall	20	sf	\$31.07	\$621		X	
Repaint CMU wall	25	sf	\$1.24	\$31		X	
			TOTAL COST	\$494,164			

<b>Site</b>								
Slope site away from building	730	sf	\$3.73	\$2,722		X		
Re-pave area to slope away from building	430	sf	\$11.19	\$4,810		X		
Re-paint curbs	135	lf	\$6.21	\$839			X	
Replace stair, ramp and retaining wall, provide proper drainage	640	sf	\$37.29	\$23,864		X		
Provide drainage at crack and re-pave parking lot	470	sf	\$7.46	\$3,505		X		
Clean and repaint stairs	100	sf	\$6.21	\$621			X	
				<b>TOTAL COST</b>	<b>\$36,361</b>			



RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY			
				I	II	III	IV
Structural							
Replace slab/sidewalk over tunnel between main b building and gym building. Replace sidewalk/tunnel lid with 1.5" metal deck with 3.5" concrete fill on top. New ledger angles each side of tunnel. Tunnel is 4' x 70' long	1	ea	\$9,321.75	\$9,322		X	
Roof ladder anchorage connection spalling concrete. Reattach ladder	1	ea	\$248.58	\$249		X	
Cover covered walkway	6850	sf	\$12.43	\$85,139		X	
TOTAL COST				\$94,709			

<b>Mechanical</b>								
Repair Huntair 16.5K CFM roof unit: repair fallen/damaged sensor in unit	1	ea	\$8,500	\$8,500		X		
Repair Huntair 2.4K CFM roof unit: SF motor bearing failing	1	ea	\$2,685	\$2,685		X		
Repair AHU in mech rm: new motors and starters SU-D2/RF-D2	1	ea	\$5,200	\$5,200		X		
Repair AHU in mech rm: new motors and starters SU-D2/EF-D3	1	ea	\$5,200	\$5,200		X		
Repair SU-D2/SU-D3: insulate CHW pipes, clean OA intake screens	1	ea	\$5,500	\$5,500		X		
Repair AHU in mech rm: new starter and belt SU-F2	1	ea	\$3,000	\$3,000		X		
Repair SF-A2/RF-A2/EF-A2 AHU: new motors and starters	1	ea	\$6,000	\$6,000		X		
Repair AHU roof units: recommend painting entire unit to protect from corrosion	1512	sf	\$4	\$6,048		X		
Repair AHU SF-G5, EF-G4, EF-G5: new starters	1	ea	\$7,350	\$7,350		X		
Repair AHU SF-G3/RF-G3: new motors and starters	1	ea	\$6,700	\$6,700		X		
Repair AHU SF-G1/RF-G1: repair damaged damper shaft, new motors and starters	1	ea	\$6,700	\$6,700		X		
Repair AHU SF-G2/RF-G2: new starters and motors	1	ea	\$6,700	\$6,700		X		
Repair AHU SF-G6/RF-G6/EF-G6: new starters and motors	1	ea	\$6,700	\$6,700		X		
Repair 2000 MBH condensing hot water boilers: repair control issues with B-4,5	5	ea	\$13,250	\$66,250		X		
Repair roof top centrifugal exhaust fans: repair EF belts, replace corroded sleeves and are turned off	3	ea	\$2,000	\$6,000		X		
Hot water fan coil units FCU-G2, FCU-G3: evidence of a leak. location could not be found	1	ea	\$1,056	\$1,056		X		
Repair ductless split system: replace battery operated thermostat	5	ea	\$650	\$3,250		X		
Repair ductless split system, outdoor condensing units: replace pipe insulation	20	ea	\$350	\$7,000		X		
Add exhaust fan for custodial closet behind D wing NE stairs	1	ea	\$2,983	\$2,983		X		
Repair AHU in mech rm: new motor and starter for SF-G4	1	ea	\$9,943	\$9,943		X		
Repair carbon steel heating water piping: pipe rack in tunnel to avm needs to be replaced	1000	lf	\$127	\$127,000		X		
Ongoing Mechanical System Upgrades Allowance	1		\$4,110,000	\$4,110,000		X		
Architectural Finishes Allowance	1	ls	\$12,429	\$12,429		X		
<b>TOTAL COST</b>				<b>\$4,422,194</b>				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY				
				I	II	III	IV	
Electrical								
Replace compact fluorescents with LED	30	ea	\$403.94	\$12,118		X		
Replace 120/208V 800A distribution panel	1	ea	\$3,604.41	\$3,604		X		
Replace 277/480V 1200A distribution panel	2	ea	\$16,406.28	\$32,813		X		
Replace 120/208V 600A distribution panel	1	ea	\$3,293.69	\$3,294		X		
Replace 480V 200A distribution Panel	2	ea	\$4,847.31	\$9,695		X		
Replace 480V 400A distribution Panel	1	ea	\$8,576.01	\$8,576		X		
Replace 120/208V 100A branch Panel	1	ea	\$2,982.96	\$2,983		X		
Fire alarm system upgrades (replacement of headend, smoke detectors. and rewiring)	278300	sf	\$1.75	\$487,025		X		
			TOTAL COST	\$560,108				

<b>Plumbing</b>								
Replace copper domestic piping	1000	lf	\$14.91	\$14,915		X		
Repair sink in Wing B HomeEc: sink has low flow issue	1	ea	\$1,056.47	\$1,056		X		
Repair drinking fountain: low/no flow issue	1	ea	\$1,056.47	\$1,056		X		
Architectural Finishes Allowance	1	ls	\$6,214.50	\$6,215		X		
<b>TOTAL COST</b>				<b>\$23,242</b>				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$8,971,347  
TOTAL COST TO REPLACE \$141,933,000  
=FCI **0.063208325**

I Priority Cost: \$ 12,429.00  
II Priority Cost: \$ 8,306,502.00  
III Priority Cost: \$ 652,416.23  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

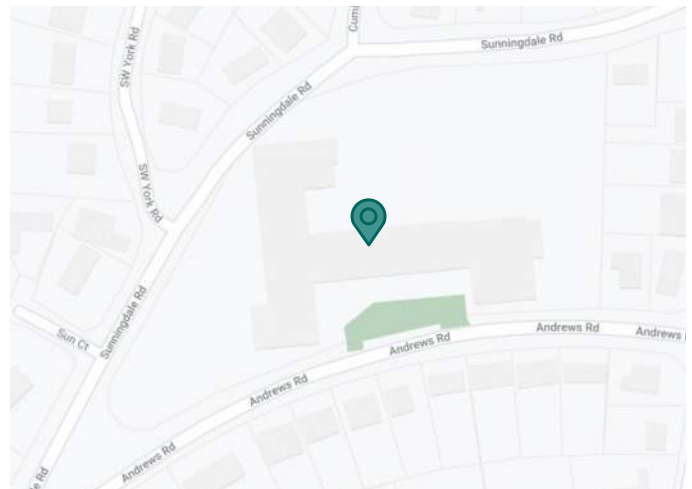
# PALISADES ELEMENTARY SCHOOL

## FACT SHEET



Palisades Elementary is currently leased to the City Parks and Recreation Department. Located near Lakeridge High School, it has a simple classroom layout along its main corridor similar to Uplands. It has a notable entrance coming from Greentree Avenue.

Repairs shown in the chart below do not include the costs associated with upgrading the Palisades facility to a District-equivalent elementary school. Additional upgrades are listed at the end of the cost estimate summary table.



1133 Andrews Road  
Lake Oswego, OR 97034

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### PALISADES ELEMENTARY SCHOOL

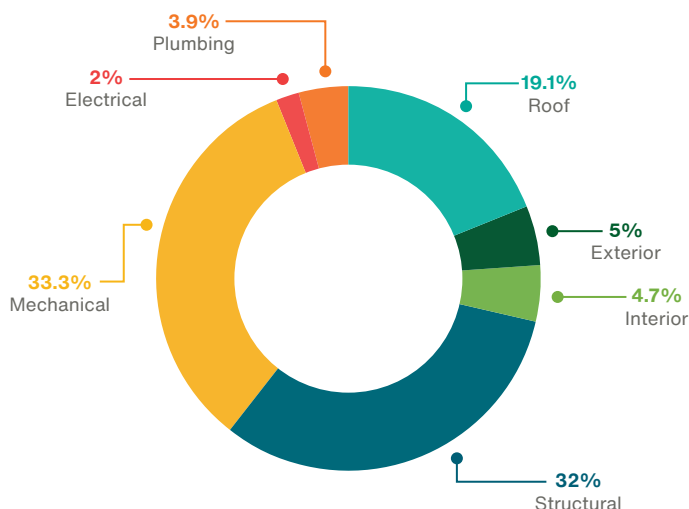
YEAR BUILT	1959
REMODELS	1990
BUILDING AREA	45,680 SF
TOTAL HEIGHT	24'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	TPO, Membrane over Plywood Deck, Ballast over Membrane
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	AHU with VAV TU

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

## DRAWINGS



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacement due to seismic rehabilitation work	51996	sf	\$24.86	\$1,292,517		X	
Provide new SBS BUR roofing and sheet metal accessories (uninsulated)	3660	sf	\$19.89	\$72,784		X	
Provide cricket behind mechanical equipment	10	ea	\$42.26	\$423		X	
Replace roof drains	9	ea	\$1,491.48	\$13,423		X	
Replace roofing around roof drain	330	sf	\$24.86	\$8,203		X	
Provide fall protection, assume post & cable system	1	ls	\$31,072.50	\$31,073	X		
Provide reglet flashing	100	lf	\$14.91	\$1,491		X	
Replace curb rails with 8" high rails	1	ls	\$2,485.80	\$2,486		X	
Replace skylight curbs for skylights slope to drain	32	lf	\$49.72	\$1,591		X	
Reinstall conduit in metal sleeves and installed on 8" high PT blocks	140	lf	\$49.72	\$6,960		X	
Replace sheet metal flashing	575	lf	\$22.37	\$12,864		X	
TOTAL COST			\$1,443,815				

<b>Architectural Exterior</b>								
Clean and re-paint stucco wall	560	sf	\$3.11	\$1,740			X	
Re-key exterior doors	9	ea	\$200.00	\$1,800		X		
Replace single pane windows (4'x8')	112	ea	\$2,485.80	\$278,410			X	
Replace single pane glazing (15'x12')	1	ea	\$4,474.44	\$4,474			X	
Replace wood soffit	200	ea	\$24.86	\$4,972			X	
Repaint concrete wall, 2 colors	4500	sf	\$1.86	\$8,390			X	
Repaint HM double door and frame	1	ea	\$310.73	\$311			X	
Repaint HM door and frame	3	ea	\$155.36	\$466			X	
Repaint wood fascia 1x10	400	lf	\$2.49	\$994			X	
Repaint T&G soffit	220	sf	\$2.18	\$479			X	
Cut back shrubbery from building	140	lf	\$12.43	\$1,740			X	
Repaint steel posts, 12' high	20	ea	\$62.15	\$1,243			X	
Repaint wood trim	42	lf	\$12.43	\$522			X	
Repaint wood soffit	958	sf	\$24.86	\$23,814			X	
Replace pair HM doors with full glazing, panic bars and card access	3	ea	\$4,474.44	\$13,423			X	
Slope site away from building	40	sf	\$3.73	\$149		X		
Clean and re-point brick masonry	100	sf	\$33.56	\$3,356		X		
Clean grass/debris out from mech grilles in masonry wall	10	ea	\$31.07	\$311		X		
Replace metal panel at covered playground	1600	sf	\$18.64	\$29,830			X	
<b>TOTAL COST</b>				<b>\$376,422</b>				

<b>Architectural Interior</b>								
Replace FRP	916	sf	\$9.94	\$9,108			X	
Repaint gypsum plaster wall	3266	sf	\$1.24	\$4,059			X	
Repaint CMU wall	270	sf	\$1.24	\$336			X	
Replace carpet tile; install new rubber base	21972	sf	\$8.70	\$191,163			X	
Refinish wood flooring	4376	sf	\$3.73	\$16,317			X	
Replace VCT flooring; new rubber base to match (E)	2618	sf	\$5.59	\$14,643			X	
Replace wood door and HM frame	38	ea	\$2,237.22	\$85,014			X	
Replace HM door and frame	14	ea	\$2,237.22	\$31,321			X	
Repair built-in metal casework	4	ea	\$621.45	\$2,486			X	
<b>TOTAL COST</b>				<b>\$354,446</b>				

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY				
				I	II	III	IV	
Site								
None at this time.								
TOTAL COST			\$0					

<b>Structural</b>								
Seismic rehabilitation work as the sole building upgrade (does not include costs for re-roofing)	47268	sf	\$49.72	\$2,349,976		X		
Seismic rehabilitation of the covered play structure	4368	sf	\$12.43	\$54,290		X		
Repair cracks in exterior wall	125	lf	\$74.57	\$9,322		X		
<b>TOTAL COST</b>				<b>\$2,413,588</b>				

<b>Mechanical</b>								
Repair 1.5 ton window AC, replace with ductless split system	1	ea	\$4,101.57	\$4,102		X		
Replace 1000 CFM hot water unit ventilator, add DDC controls	20	ea	\$9,943.20	\$198,864		X		
Replace 750 CFM hot water unit ventilator, add DDC controls	1	ea	\$8,700.30	\$8,700		X		
Replace 1260 CFM hot water unit ventilator, add DDC controls	1	ea	\$11,807.55	\$11,808		X		
Replace 1560 CFM hot water unit ventilator, add DDC controls	1	ea	\$13,671.90	\$13,672		X		
Replace 5 ft hot water cabinet convectors, add DDC controls	9	ea	\$2,734.38	\$24,609		X		
Replace 24 ft hot water cabinet convectors	1	ea	\$3,728.70	\$3,729		X		
Repair 7000 CFM steam heating ventilator HV-1	1	ea	\$13,671.90	\$13,672		X		
Replace 2000 CFM steam heating ventilator HV-2: Add DDC controls	1	ea	\$32,315.40	\$32,315		X		
Repair 1400 CFM hot water heating ventilator HV-3	1	ea	\$6,835.95	\$6,836		X		
Replace pneumatic controls used for HV-1, 2 & 3, replace with DDC	257	ea	\$683.60	\$175,684		X		
Replace roof top centrifugal exhaust fans, add DDC controls	14	ea	\$22,372.20	\$313,211		X		
Replace 2500 MBH steam boiler, update steam boiler to hot water	2	ea	\$63,387.90	\$126,776		X		
Replace carbon steel hot water piping	3800	lf	\$68.36	\$259,766		X		
Replace 280 CFM steam unit heater	1	ea	\$3,977.28	\$3,977		X		
Ongoing Mechanical System Upgrades Allowance	1		\$1,300,000.00	\$1,300,000	X			
Architectural Finishes Allowance	1	ls	\$12,429.00	\$12,429		X		
<b>TOTAL COST</b>				<b>\$2,510,150</b>				

<b>Electrical</b>								
Replace 600A 120/208V main switchgear	1	ea	\$8,451.72	\$8,452		X		
Add surge suppression	1	ea	\$1,367.19	\$1,367		X		
Upgrade fire alarm system	47268	sf	\$3.00	\$141,804		X		
Replace outlets to GFI near sinks	1	ea	\$683.60	\$684		X		
<b>TOTAL COST</b>				<b>\$152,307</b>				

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Plumbing							
Replace 80 gal electric water heater, replace with condensing gas hot water heater	1	ea	\$3,045.11	\$3,045		X	
Replace galvanized domestic piping	2500	lf	\$74.57	\$186,435		X	
Repair wall hung lavatories: Update fixture to 0.5 gpm	19	ea	\$1,988.64	\$37,784		X	
Replace floor mounted toilets, update to 1.6 gpf standard	26	ea	\$1,988.64	\$51,705		X	
Architectural Finishes Allowance	1	ls	\$12,429.00	\$12,429		X	
			TOTAL COST	\$291,398			

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$7,542,125  
 TOTAL COST TO REPLACE \$21,270,600  
 =FCI **0.354579808**

I Priority Cost: \$ 1,331,072.50  
 II Priority Cost: \$ 5,485,799.49  
 III Priority Cost: \$ 725,253.28  
 IV Priority Cost: \$ -

\*Repair Costs Indicated above do NOT include costs to operate Palisades as a K-5 elementary facility. The following is a list of additional costs that would be needed to upgrade the Palisades facility to equivalent standards of other elementary schools in the district.

<b>Upgrade to Equivalent Elementary Standards</b>							
Remodel existing classroom(s) to Innovation lab	1	ea	\$550,000.00	\$550,000			
Furniture Replacement Allowance	1	ea	\$400,000.00	\$400,000			
Site & Accessibility Upgrades	1	ea	\$650,000.00	\$650,000			
Technology Upgrades	1	ea	\$450,000.00	\$450,000			
Kitchen Upgrades	1	ea	\$400,000.00	\$400,000			
			<b>TOTAL COST</b>	<b>\$2,450,000</b>			

TOTAL COST TO REPAIR AS AN ELEMENTARY SCHOOL \$9,992,125  
 Soft Cost Multiplier 20%  
 TOTAL COST INCLUDING SOFT COSTS **\$11,990,550**

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.



## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1959.** Wood framing with CMU and steel column cafeteria. Tectum panel diaphragms at cafeteria and wood structural panel diaphragms elsewhere.

Building Risk Category III

ASCE 41-13 Life Safety Performance Level for entire building

### **Main Building Seismic Retrofit Cost Per Square Foot**

\$40/sf (does not include costs for re-roofing)

### **Covered Play Structure Seismic Retrofit Cost Per Square Foot**

\$10/sf (does not include costs for re-roofing)

### **Summary of Seismic Structural Deficiencies (included in cost per square foot above)**

- Reinforcing steel — there is not adequate reinforcing steel in the masonry shear walls in the cafeteria for in-plane or out-of-plane forces
- Masonry shear stress check-likely not compliant for cafeteria shear walls
- Wall anchorage — the exterior masonry shear walls in the gym are not adequately braced for out-of-plane forces at each floor level
- Interior wood walls in the main building do not include wood structural panels or shear wall hold-downs
- Wood structural panel diaphragms likely need additional nailing to increase capacity
- Wood structural panel diaphragms need to be installed in place of Tectum panels in the cafeteria
- Diaphragm chords and collectors should be added
- Bracing should be added to the covered plate structure and the diaphragm connections to columns should be strengthened

### **Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)**

- Sprinkler ceiling clearance — penetrations through panelized ceilings do not have appropriate clearances
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced
- Edge clearance for ceilings — free edges of suspended ceilings do not have a 3/4 inch clearance between the ceiling and the adjacent wall
- Edge support for ceilings — free edges of suspended ceilings are not supported by two inch wide closure angles
- There is an unreinforced masonry chimney on the roof above the cafeteria that should be removed

**Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)**

The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation. See the plans with field notes for more information.

- Cracking in exterior brick veneer. This could cause deterioration of exterior wood structural panels if they exist. Reference the architectural portion of the cost estimate for extents

## PHOTO OF DEFICIENCIES



CRACKING IN BRICK VENEER



UNANCHORED EQUIPMENT IN KITCHEN



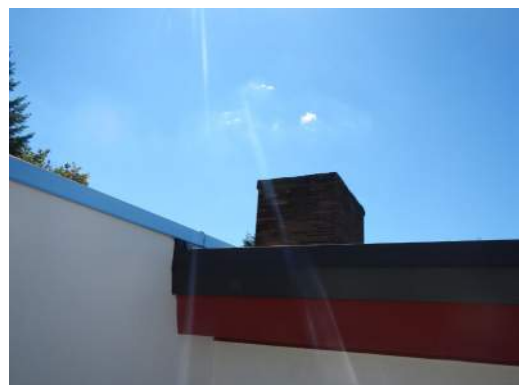
CROSS-GRAIN BENDING INDUCED IN JOIST



UNBRACED PIPING



INADEQUATE DIAPHRAGM CONNECTION



URM CHIMNEY

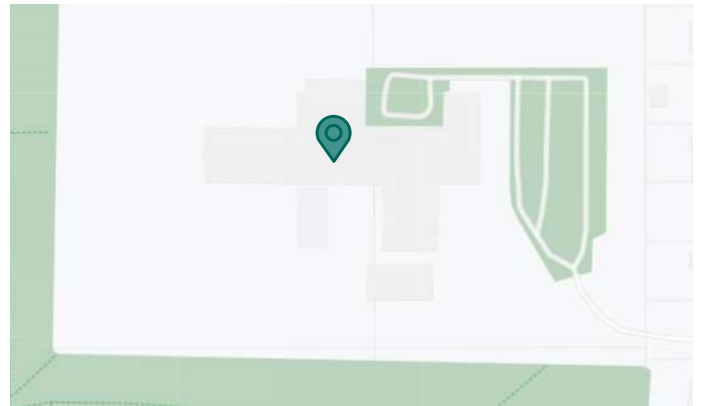
# UPLANDS ELEMENTARY SCHOOL

## FACT SHEET



Uplands Elementary School, which is similar in floor plan to Palisades Elementary School, is currently being used as a temporary school for the students and staff of Oak Creek Elementary School as that building undergoes renovations which are expected to be complete the summer of 2020.

Renovations to Uplands Elementary School were completed in 2020. Structural improvements were included in the renovation, therefore no seismic evaluation information is provided in this updated document.



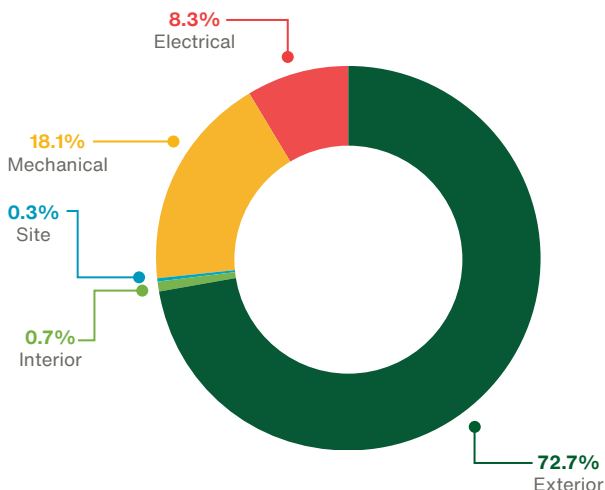
2055 SW Wembley Park Road  
Lake Oswego, OR 97034

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### UPLANDS ELEMENTARY SCHOOL

YEAR BUILT	1961
REMODELS	1990, 2020
BUILDING AREA	51,676 SF
TOTAL HEIGHT	24'
NUMBER OF FLOORS	1
OCCUPANCY	E-1
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	TPO, Ballast
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Unit Ventilators in Classrooms, Constant Volume AHU in Common Spaces

### FACILITY REPAIR COST ALLOCATION

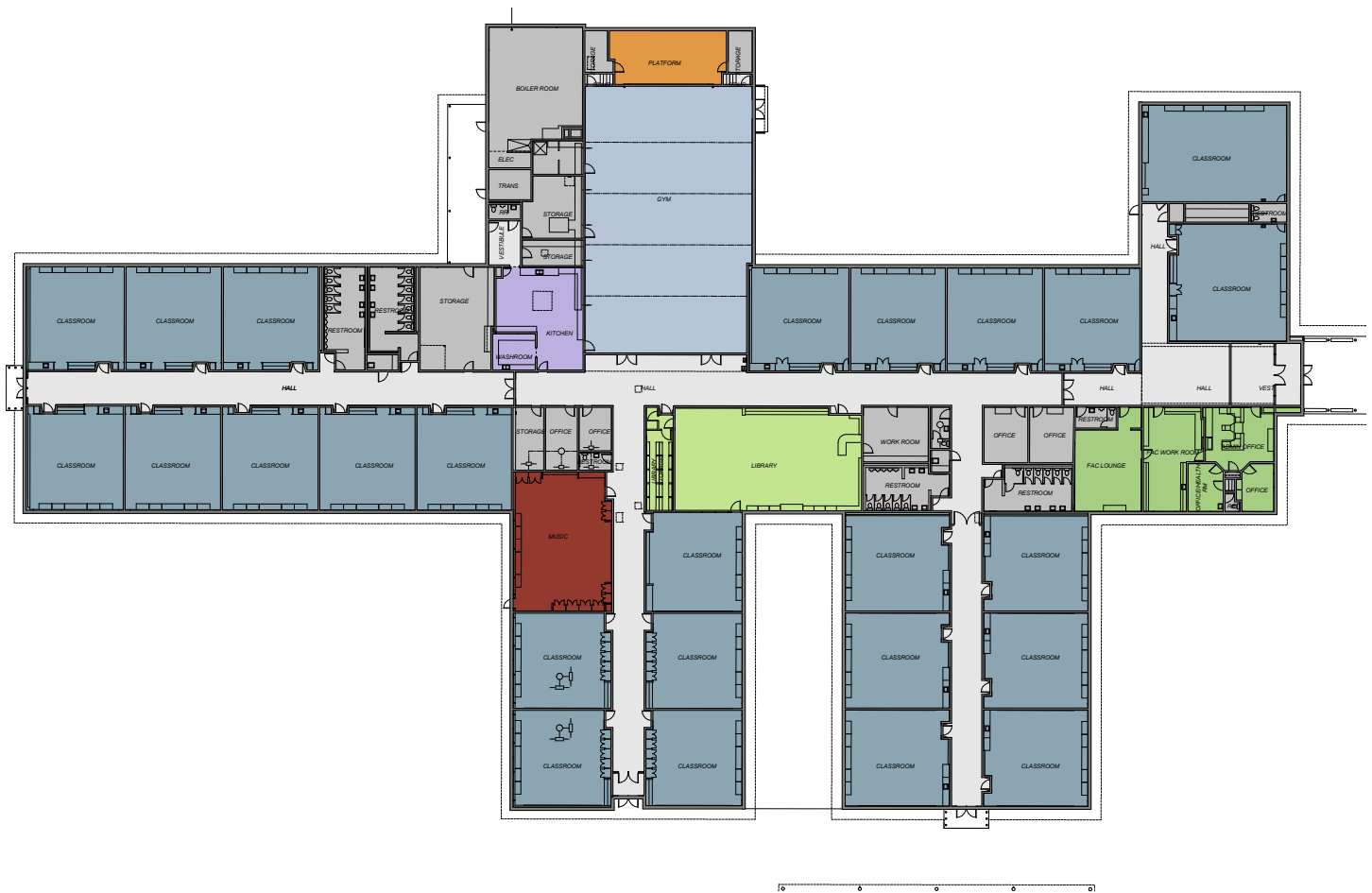


Repair costs totaling less than 0.1% are not included.

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY				
				I	II	III	IV	
Architectural Roof								
None at this time.								
TOTAL COST			\$0					
Architectural Exterior								
Replace exterior windows using security glazing	2472	sf	\$150.00	\$370,800	X			
Re-key exterior doors	10	ea	\$200.00	\$2,000		X		
Replace single pane aluminum windows (caulk around edges) (size: 4'x7').	182	ea	\$2,262.93	\$411,853		X		
Provide window head and sill flashing	728	lf	\$24.86	\$18,097		X		
TOTAL COST			\$802,750					
Architectural Interior								
Repaint 2x4 tectum ceiling panel	4360	sf	\$1.86	\$8,129			X	
TOTAL COST			\$8,129					
Site								
Slope site away from building	330	lf	\$3.73	\$1,230		X		
TOTAL COST			\$1,230					
Structural								
None at this time.								
TOTAL COST			\$0					
Mechanical								
Ongoing Mechanical System Upgrades Allowance	1		\$200,000.00	\$200,000		X		
TOTAL COST			\$200,000					
Electrical								
Repair exterior lighting CFL: Add/repair exterior lighting	1	ea	\$1,988.64	\$1,989		X		
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	51676	sf	\$1.75	\$90,433		X		
TOTAL COST			\$92,422					
Plumbing								
None at this time.								
TOTAL COST			\$0					

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$1,104,531  
 TOTAL COST TO REPLACE \$23,254,200  
 =FCI **0.04749811**

I Priority Cost: \$ 370,800.00  
 II Priority Cost: \$ 725,602.00  
 III Priority Cost: \$ -  
 IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.



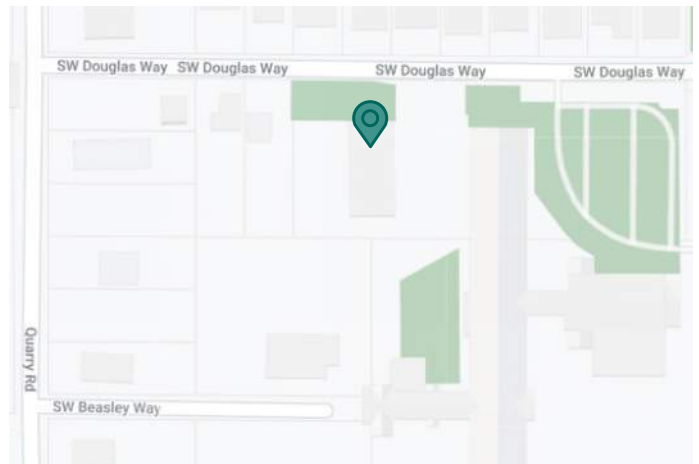
# FACILITIES OPERATIONS BUILDING

## FACT SHEET



The Facilities Operations building is located in a residential and commercial setting next to Lake Grove Elementary School.

The roof is in overall good shape, but needs to be cleaned. Roof access and fall protection should be added to facilitate easier maintenance. The caulk is damaged at several precast concrete panel joints and should be replaced. The side lot of the building needs to be repaved.



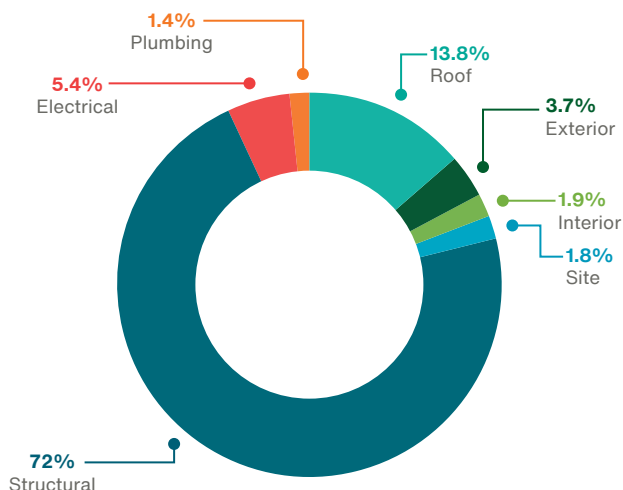
4200 SW Douglas Way  
Lake Oswego, OR 97035

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### FACILITIES OPERATIONS BUILDING

YEAR BUILT	1976
REMODELS	None
BUILDING AREA	10,049 SF
TOTAL HEIGHT	30'
NUMBER OF FLOORS	2
OCCUPANCY	B
PRIMARY STRUCTURE	Precast Concrete
ROOF TYPE	Asphalt Shingle
FLOOR FINISHES	Polished Concrete
CEILING FINISHES	Exposed Wood Trusses
PARTITION TYPE	Gyp. Board over Metal Stud
HVAC TYPE	Radiant Gas Heater

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

## DRAWINGS

Building plan not included in this report.

## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Replace shingle roofing	7509	sf	\$6.21	\$46,665		X	
Provide roof access hatch with safety rail	1	ea	\$4,660.88	\$4,661	X		
Provide fall protection, assume post & cable system	1	ls	\$31,072.50	\$31,073	X		
TOTAL COST			\$82,398				
Architectural Exterior							
Repaint HM double door and frame	3	ea	\$155.36	\$466			X
Re-key exterior doors	6	ea	\$200.00	\$1,200		X	
Repair roll up door concrete header, add sloped top	30	lf	\$31.07	\$932		X	
Repaint building exterior	6500	sf	\$1.86	\$12,118			X
Caulk panel joints (18' high)	12	ea	\$124.29	\$1,491		X	
Provide window sill and head flashing	48	lf	\$24.86	\$1,193		X	
Replace single pane windows (3'x5' size)	4	ea	\$1,118.61	\$4,474			X
Clean moss off of dust collector machine	1	ea	\$248.58	\$249			X
TOTAL COST			\$22,124				
Architectural Interior							
Replace carpet tile; install new rubber base	30	sf	\$8.70	\$261			X
Repair damaged plyywood flooring	30	sf	\$6.21	\$186		X	
Repaint wall	3110	sf	\$1.24	\$3,865			X
Patch and repaint gypsum plaster wall	20	sf	\$2.49	\$50			X
Repaint gyp board ceiling	200	sf	\$1.49	\$298			X
Replace door knob with lever	5	ea	\$621.45	\$3,107			X
Repaint door and frame	8	ea	\$186.44	\$1,491			X
Replace handrail	40	lf	\$49.72	\$1,989		X	
TOTAL COST			\$11,248				
Site							
Repave parking lot	2800	sf	\$3.73	\$10,440		X	
TOTAL COST			\$10,440				
Structural							
Seismic rehabilitation work as the sole building upgrade (does not include costs for re-roofing)	7509	sf	\$55.93	\$419,982		X	
Provide blocking and strapping of metal stud wall	1000	sf	\$9.94	\$9,943		X	
TOTAL COST			\$429,925				
Mechanical							
None at this time.							
TOTAL COST			\$0				

RECOMMENDATIONS	QUANTITY	UNIT	COST	PRIORITY				
				I	II	III	IV	
Electrical								
Add fire alarm system	7509	sf	\$4.25	\$31,913		X		
TOTAL COST				\$31,913				
Plumbing								
Replace lavatory, water closet and shower in 1 restroom	1	ea	\$8,327.43	\$8,327		X		
TOTAL COST				\$8,327				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$596,377  
TOTAL COST TO REPLACE \$3,116,235  
=FCI **0.191377379**

I Priority Cost: \$ 35,733.38  
II Priority Cost: \$ 534,262.96  
III Priority Cost: \$ 26,380.55  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1976.** Precast concrete walls with wood structural panel diaphragms on the roof and wood structural panels on the mezzanine. Wood trusses.

Building Risk Category II

ASCE 41-13 Life Safety Performance Level for each building

### Main Building Seismic Retrofit Cost Per Square Foot

\$45/sf (does not include costs for re-roofing)

### Summary of Seismic Structural Deficiencies (included in cost per square foot above)

- Reinforcing steel — precast walls are likely under reinforced for in-plane or out-of-plane forces
- Roof diaphragm and mezzanine connections to precast shear walls should be strengthened
- Wood structural panel diaphragm nailing should be increased

### Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)

- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. Many shelves are braced, but some are missing braces
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced

### Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)

The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation. See the plans with field notes for more information.

- There is a light gauge metal stud wall in the mezzanine that needs blocking and strapping over the full height and length. We estimate this cost at \$8/sf over the wall surface area

## PHOTO OF DEFICIENCIES



CORROSION IN PANEL CONNECTIONS



INADEQUATE DIAPHRAGM CONNECTION



FALL PRONE CONTENTS



UNBRACED PIPING



PENDULUM LIGHTING



WALL NEEDS BLOCKING AND STRAPPING

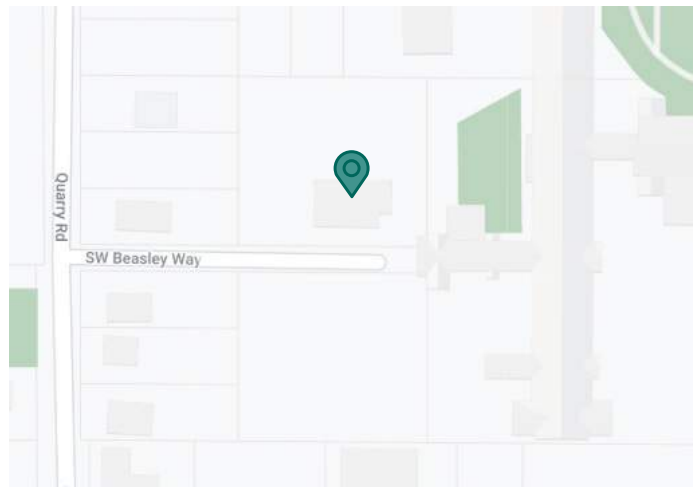
# BUS BARN

## FACT SHEET



The Bus Barn building is located in a residential and commercial setting next to Lake Grove Elementary School and the Facility Operations building. The building's design is in the form of a simple square.

A large area of the exterior CMU walls need to be patched and repainted. The electrical distribution panels are aged and need to be replaced.



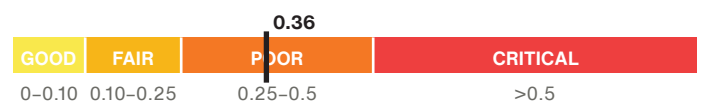
4301 SW Beasley Way  
Lake Oswego, OR 97035

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### BUS BARN

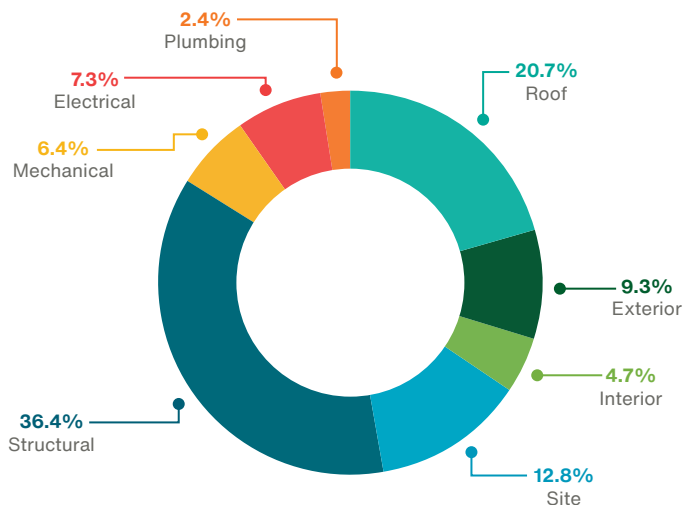
YEAR BUILT	1969
REMODELS	None
BUILDING AREA	2,559 SF
TOTAL HEIGHT	11', 22'
NUMBER OF FLOORS	1
OCCUPANCY	B, F-1
PRIMARY STRUCTURE	CMU Shear Wall
ROOF TYPE	TPO, Asphalt Membrane
FLOOR FINISHES	Carpet Tile, Polished Concrete, Exposed Plywood
CEILING FINISHES	Gyp. Board, Wood Decking
PARTITION TYPE	Gyp. Board over Metal Stud
HVAC TYPE	Package Rooftop Units

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.



## DRAWINGS

Building plan not included in this report.

## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacement due to seismic rehabilitation work	2777	lf	\$24.86	\$69,031		X	
Provide reglet flashing	40	lf	\$14.91	\$597			X
Repaint wood fascia - 1x10	70	lf	\$2.49	\$174			X
Replace wood fascia - 1x10	15	lf	\$12.43	\$186			X
Provide roof access & roofing/insulation over office area	1	ea	\$12,429.00	\$12,429		X	
Install new wall mounted ladder	2	ea	\$3,107.25	\$6,215	X		
TOTAL COST			\$88,631				
Architectural Exterior							
Patch and paint CMU wall (30'x164' + 53.6'x18' + 95'11.3')	7000	sf	\$4.97	\$34,801		X	
Re-key exterior doors	6	ea	\$200.00	\$1,200		X	
Replace concrete window sill	4	lf	\$43.50	\$174		X	
Clean and paint rusted columns (12'tall)	2	ea	\$124.29	\$249		X	
Replace door hardware with panic hardware	4	ea	\$621.45	\$2,486	X		
Repaint HM door and frame	4	ea	\$155.36	\$621		X	
TOTAL COST			\$39,531				
Architectural Interior							
Repair rolling door mechanical operation components	1	ea	\$1,500.00	\$1,500		X	
Replace broadloom carpet with carpet tile; new rubber base to match (E)	700	sf	\$8.08	\$5,655			X
Replace sheet flooring; new rubber base to match (E)	50	sf	\$9.94	\$497			X
Repair damaged plywood flooring	30	sf	\$6.21	\$186		X	
Repaint wall	2700	sf	\$1.24	\$3,356			X
Patch/repaint walls	100	sf	\$2.49	\$249			X
Patch and repaint gypsum board ceiling	20	sf	\$12.43	\$249			X
Repaint gyp board ceiling	50	sf	\$1.49	\$75			X
Replace door knob with lever	9	ea	\$621.45	\$5,593			X
Repaint door and frame	8	ea	\$186.44	\$1,491			X
Replace handrail	20	lf	\$49.72	\$994		X	
TOTAL COST			\$19,845				
Site							
Repave parking lot	13000	sf	\$3.73	\$48,473		X	
Repair parking lot	5000	sf	\$1.24	\$6,215		X	
TOTAL COST			\$54,688				
Structural							
Seismic rehabilitation work as the sole building upgrade (does not include costs for re-roofing)	2777	sf	\$55.93	\$155,319		X	
TOTAL COST			\$155,319				
Mechanical							
Replace 2.5 ton carrier package roof top unit	1	ea	\$26,100.90	\$26,101		X	
Repair RTU ductwork insulation falling off duct in vehicle bay	20	lf	\$68.36	\$1,367		X	
TOTAL COST			\$27,468				

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Electrical							
Replace 120/240V 400A main distribution switchgear	1	ea	\$9,694.62	\$9,695		X	
Replace 120/240V 100A distribution panel	1	ea	\$4,101.57	\$4,102		X	
Replace 120/240V 225A distribution panel	1	ea	\$5,965.92	\$5,966		X	
Replace 120/240V 125A distribution panel	1	ea	\$4,723.02	\$4,723		X	
Repair exterior lighting: add lighting controls	1	ea	\$1,988.64	\$1,989		X	
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	2777	sf	\$1.75	\$4,860		X	
TOTAL COST				\$31,334			

<b>Plumbing</b>								
Replace 50 gal gas water heater, update with condensing hot water heater	1	ea	\$2,423.66	\$2,424		X		
Replace wall mounted lavatory, updated fixture to 0.5 gpm	1	ea	\$1,988.64	\$1,989		X		
Repair carbon steel natural gas piping: Add flexible connection at hot water heater and unit heaters	3	ea	\$1,988.64	\$5,966		X		
<b>TOTAL COST</b>				<b>\$10,378</b>				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$427,194  
TOTAL COST TO REPLACE \$1,180,225  
=FCI **0.361959679**

I Priority Cost: \$ 8,700.30  
II Priority Cost: \$ 400,372.08  
III Priority Cost: \$ 18,121.48  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1969.** CMU shear walls with wood structural panel diaphragms on the roof and straight sheathing on the mezzanine. Wood trusses.

Building Risk Category II

ASCE 41-13 Life Safety Performance Level for main building

### Main Building Seismic Retrofit Cost Per Square Foot

\$45/sf (does not include costs for re-roofing)

### Summary of Seismic Structural Deficiencies (included in cost per square foot above)

- Reinforcing steel — masonry shear walls are likely under reinforced for in-plane or out-of-plane forces
- Masonry shear stress check-likely not compliant
- Wall anchorage — the exterior masonry shear walls in the gym are not adequately braced for out-of-plane forces at each floor level
- The mezzanine diaphragm does not appear to be positively attached to ledgers bolted to the shear walls. This diaphragm connection must be strengthened. Additionally, the straight sheathing diaphragm should be replaced with wood structural panels
- The roof diaphragm is not adequately connected to the masonry shear walls. Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)
- Sprinkler ceiling clearance — penetrations through panelized ceilings do not have appropriate clearances
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced

### Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)

The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation. See the plans with field notes for more information.

- None observed on site

## PHOTO OF DEFICIENCIES



PENDULUM LIGHTS



MISSING DIAPHRAGM CONNECTION TO  
LEDGER



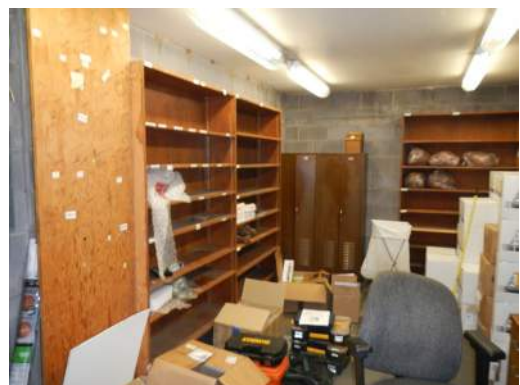
MISSING BOLT IN LEDGER



UNBRACED EQUIPMENT



MISSING CONNECTION HARDWARE



UNBRACED SHELVING

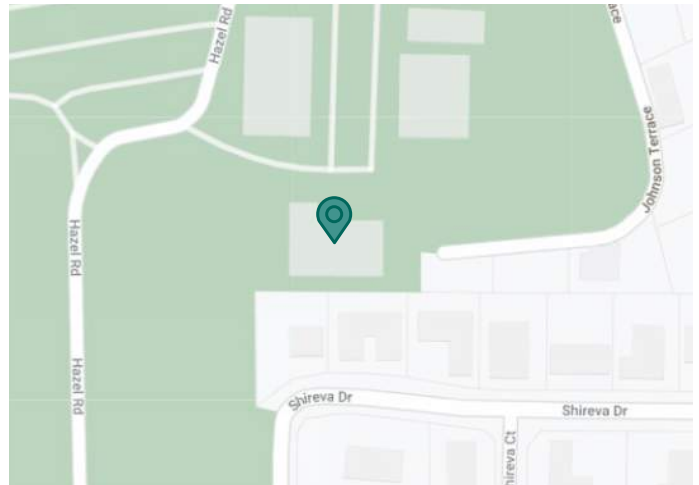
# ADMINISTRATION BUILDING

## FACT SHEET



The Administration Building is located on the same site as Lake Oswego High School. It houses all district central management. The design of the building has a range of offices revolving around a central core of supporting rooms and gathering spaces.

The entire roof should be replaced to drain properly and meet current energy codes. All wood siding and a few areas of brick veneer are leaking and should be replaced with a new metal panel system and extended parapet flashing.



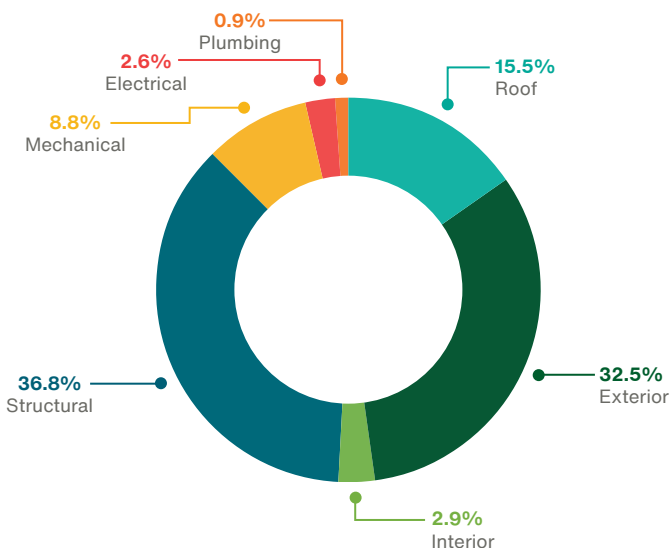
2455 Country Club Road  
Lake Oswego, OR 97034

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### ADMINISTRATION BUILDING

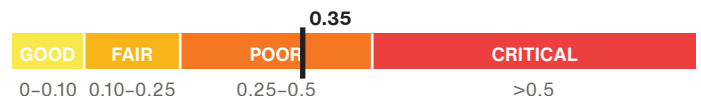
YEAR BUILT	1961
REMODELS	1988
BUILDING AREA	7,613 SF
TOTAL HEIGHT	12'
NUMBER OF FLOORS	1
OCCUPANCY	B
PRIMARY STRUCTURE	Wood Frame
ROOF TYPE	TPO
FLOOR FINISHES	Carpet Tile
CEILING FINISHES	ACT
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Forced Air Furnaces

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

## DRAWINGS

Building plan not included in this report.



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacement due to seismic rehabilitation work	7990	sf	\$24.86	\$198,615		X	
Provide new SBS BUR roof system substrate and roof drain for entry vestibule	50	sf	\$65.87	\$3,294		X	
Provide roof hatch ladder and safety rail	1	ea	\$3,728.70	\$3,729	X		
Install new wall mounted ladder	1	ea	\$3,107.25	\$3,107	X		
			TOTAL COST	\$208,745			

<b>Architectural Exterior</b>							
Replace damaged wood door with HM door	1	ea	\$2,237.22	\$2,237			X
Replace door hardware with panic hardware	2	ea	\$621.45	\$1,243		X	
Replace vestibule area	150	sf	\$300.00	\$45,000	X		
Re-key exterior doors	4	ea	\$200.00	\$800		X	
Replace entry vestibule storefront (8' tall, 1 set of double doors)	1	ls	\$16,157.70	\$16,158		X	
Replace single pane aluminum windows (4'-10" x 4'-10")	15	ea	\$1,864.35	\$27,965			X
Replace single pane aluminum windows (3'-6" x 7'-0")	7	ea	\$1,864.35	\$13,050			X
Replace single pane aluminum windows (3'-6" x 2'-4")	8	ea	\$621.45	\$4,972			X
Replace damaged fascia and provide new attic venting	172	lf	\$43.50	\$7,482			X
Replace metal cap flashing and counter flashing	172	lf	\$22.37	\$3,848			X
Provide window sill and head flashing	157	lf	\$24.86	\$3,903			X
Replace rotted wood mullions	27	lf	\$18.64	\$503			X
Replace wood trellis with composite wood materials (9-2x4, 7-2x8, 14 2x6 columns)	60	lf	\$14.91	\$895			X
Remove brick veneer exterior (10' tall)	140	lf	\$12.43	\$1,740		X	
Remove wood siding (10' tall)	235	lf	\$12.43	\$2,921		X	
Provide metal panel system building exterior and extended parapet flashing (entire building)	410	lf	\$745.74	\$305,753		X	
			<b>TOTAL COST</b>	<b>\$438,471</b>			

<b>Architectural Interior</b>							
Replace sheet flooring; new rubber base to match (E)	150	sf	\$9.94	\$1,491			X
Repair heat welded seam in sheet flooring	20	lf	\$12.43	\$249			X
Repaint wall	3772	sf	\$1.24	\$4,688			X
Patch and repaint gypsum plaster wall	1095	sf	\$2.49	\$2,722			X
Replace wood window sill	40	lf	\$18.64	\$746			X
Replace 4'x4' fabric wrapped acoustical wall panel	1	ea	\$372.87	\$373			X
Replace 1x1 glue-on ceiling tile	417	sf	\$8.70	\$3,628			X
Replace 2x2 glue-on ceiling tile	90	sf	\$8.70	\$783			X
Refinish wood door and frame	34	ea	\$621.45	\$21,129			X
Replace built-in wood casework	110	sf	\$18.64	\$2,051			X
Replace toilet stall partition door	2	ea	\$932.18	\$1,864		X	
			<b>TOTAL COST</b>	<b>\$39,724</b>			

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY				
				I	II	III	IV	
Site								
None at this time.								
TOTAL COST			\$0					

<b>Structural</b>								
Seismic rehabilitation work as the sole building upgrade (does not include costs for re-roofing)	7990	sf	\$62.15	\$496,539		X		
TOTAL COST				\$496,539				

<b>Mechanical</b>								
Replace 3 ton RTU with DX and gas heat	1	ea	\$26,100.90	\$26,101		X		
Replace 4 ton Carrier RTU with DX and gas heat	1	ea	\$26,100.90	\$26,101		X		
Replace 3 ton Carrier RTU with DX and gas heat	1	ea	\$26,100.90	\$26,101		X		
Repair Tempstar split system with gas furnace: replace insulation on refrigerant line	20	lf	\$23.30	\$466		X		
Repair Carrier split system with gas furnace: replace insulation on refrigerant line	20	lf	\$23.30	\$466		X		
Upgrade DDC throughout building	7990	sf	\$5.00	\$39,950		X		
Architectural Finishes Allowance	1	ls	\$621.45	\$621		X		
TOTAL COST				\$119,806				

<b>Electrical</b>								
Add exterior lighting control for fixture near front entrance	1	ea	\$683.60	\$684			X	
Add fire alarm system throughout building	7990	sf	\$4.25	\$33,958		X		
Architectural Finishes Allowance	1	ls	\$62.15	\$62		X		
TOTAL COST				\$34,703				

<b>Plumbing</b>								
Replace 20 gal gas water heater	1	ea	\$1,305.05	\$1,305		X		
Repair wall hung lavatory, update fixture to 0.5 gpm	2	ea	\$1,988.64	\$3,977		X		
Replace floor mounted toilets, update to 1.6 gpf standard	2	ea	\$1,988.64	\$3,977		X		
Architectural Finishes Allowance	1	ls	\$2,485.80	\$2,486		X		
TOTAL COST				\$11,745				

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$1,349,734  
TOTAL COST TO REPLACE \$3,882,630  
=FCI **0.347633831**

I Priority Cost: \$ 51,835.95  
II Priority Cost: \$ 1,194,498.26  
III Priority Cost: \$ 103,399.34  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

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**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1961.** Remodeled in 1988. Wood framed building with wood structural panel diaphragms.

Building Risk Category II

ASCE 41-13 Life Safety Performance Level for main building

### Main Building Seismic Retrofit Cost Per Square Foot

\$50/sf (does not include costs for re-roofing)

The original structural drawings could not be located. The oldest drawings provided were 1988 remodel drawings. These indicated wood-framed walls with brick veneer and wood joist framing. The ceiling panels in the building are adhered to a layer of gypsum sheathing, making it impossible to see the framing without invasive investigation.

### Summary of Seismic Structural Deficiencies (included in cost per square foot above)

- The wood structural panel diaphragm connections to walls likely should be strengthened
- Interior wood walls in the main building do not include wood structural panels or shear wall holddowns
- Wood structural panel diaphragms likely need additional nailing and blocking to increase capacity
- Diaphragm chords and collectors should be added

### Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)

- Sprinkler ceiling clearance — penetrations through panelized ceilings do not have appropriate clearances
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced

### Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)

The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation. See the plans with field notes for more information.

- There is a wood trellis on the west side of the building that has deteriorated and should be removed or replaced. Reference the architectural portion of the cost estimate for extents

## PHOTO OF DEFICIENCIES



CRACKING IN BRICK VENEER



INFLEXIBLE MEP CONNECTIONS



DETERIORATED TRELLIS



POSSIBLE WATER INTRUSION



FALL PRONE CONTENTS



WATER DAMAGE IN BRICK VENEER

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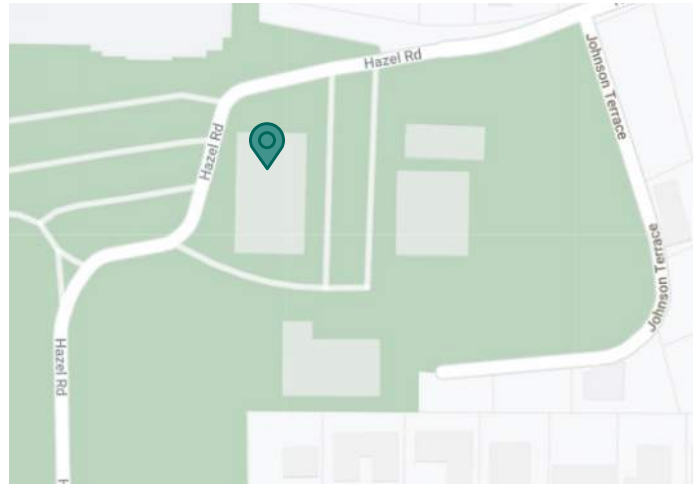
# TECHNOLOGY BUILDING

## FACT SHEET



The Technology building is located across from the swimming pool filled with multi-purpose spaces and offices. The building once served as Lake Oswego High School's auto wood shop until it turned into a centralized network station for the entire school district.

The roof needs a full replacement with installation of fall protection. Overflow drains need to be added along with roof drains that should be replaced. The gypsum plaster wall in the interior needs to be repainted.



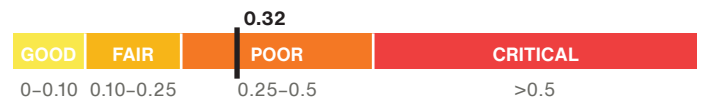
2477 Country Club Road  
Lake Oswego, OR 97034

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### TECHNOLOGY BUILDING

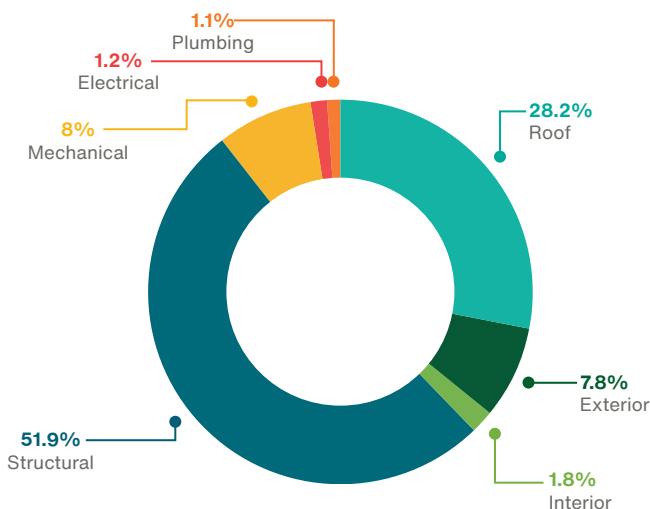
YEAR BUILT	1959
REMODELS	None
BUILDING AREA	10,150 SF
TOTAL HEIGHT	22'
NUMBER OF FLOORS	2
OCCUPANCY	B, E1
PRIMARY STRUCTURE	CMU
ROOF TYPE	Ballast
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	ACT, Gyp. Board, Wood Decking
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Packaged Rooftop Units

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

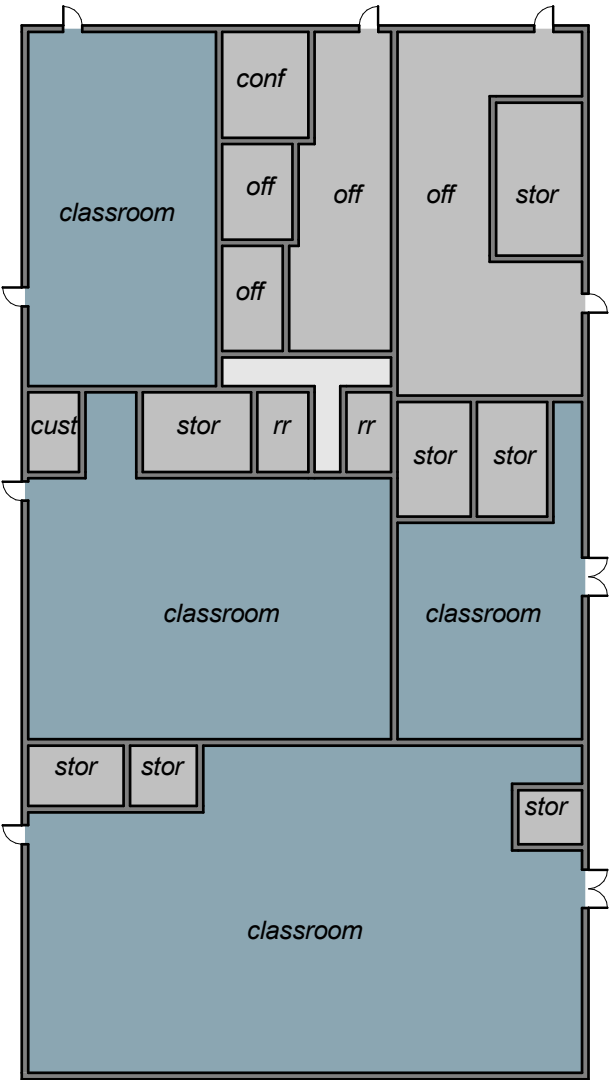
### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.



DRAWINGS



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacement due to seismic rehabilitation work	11372	sf	\$24.86	\$282,685		X	
Replace roof drains	5	ea	\$1,491.48	\$7,457		X	
Install roof drain and associated piping	2	ea	\$3,728.70	\$7,457		X	
Provide overflow drain and associated piping	7	ea	\$3,728.70	\$26,101		X	
Replace skylight with new curbs at 8" high	15	ea	\$3,107.25	\$46,609		X	
Provide fall protection, assume post & cable system	1	ls	\$31,072.50	\$31,073	X		
Provide roof hatch ladder and safety rail	1	ea	\$3,728.70	\$3,729	X		
Replace mech equip curbs with 8" high PT curbs	8	ea	\$49.72	\$398		X	
Reinstall conduit in metal sleeves and installed on 8" high PT blocks	300	lf	\$49.72	\$14,915		X	
Remove pitch pocket and replace with sleeve	1	ea	\$310.73	\$311		X	
Replace reglet flashing	94	lf	\$14.91	\$1,402		X	
TOTAL COST			\$422,136				
Architectural Exterior							
Replace exterior wall mounted light fixture. Enclose conduit in sleeve	1	ea	\$621.45	\$621		X	
Re-key exterior doors	8	ea	\$200.00	\$1,600		X	
Clean and repair metal columns	8	ea	\$124.29	\$994			X
Repaint roof drain piping	2	ea	\$124.29	\$249			X
Replace half round wood trim at soffit	4	lf	\$18.64	\$75			X
Repaint stucco walls under overhang	833	sf	\$3.11	\$2,588			X
Replace door sweep	3	ea	\$248.58	\$746		X	
Repaint HM door and frame	8	ea	\$155.36	\$1,243			X
Replace HM door and frame	2	ea	\$2,237.22	\$4,474		X	
Replace single pane windows	1200	sf	\$74.57	\$89,489			X
Replace door knob with lever handle	1	ea	\$621.45	\$621			X
Place sealant between sidewalk and building	410	lf	\$6.21	\$2,548		X	
Repaint concrete wall	1775	sf	\$6.21	\$11,031			X
TOTAL COST			\$116,279				
Architectural Interior							
Replace FRP	361	sf	\$9.94	\$3,589			X
Replace acoustical panel	18	sf	\$23.30	\$419			X
Repaint gypsum plaster wall	2263	sf	\$1.24	\$2,813			X
Replace carpet tile; install new rubber base	1840	sf	\$8.70	\$16,009			X
Replace resilient flooring including cove base	136	sf	\$12.43	\$1,690			X
Replace resilient flooring	187	sf	\$9.94	\$1,859			X
Repaint HM door and frame	4	ea	\$186.44	\$746			X
TOTAL COST			\$27,126				
Site							
None at this time.							
TOTAL COST			\$0				
Structural							
Seismic rehabilitation work as the sole building upgrade (not including costs for re-roofing)	11372	sf	\$68.36	\$777,384		X	
TOTAL COST			\$777,384				

RECOMMENDATIONS				PRIORITY				
	QUANTITY	UNIT COST	COST	I	II	III	IV	
Mechanical								
Replace Trane 7.5 ton packaged roof top	3	ea	\$32,315.40		\$96,946		X	
Replace roof top centrifugal exhaust fan	1	ea	\$22,372.20		\$22,372		X	
			TOTAL COST	\$119,318				

<b>Electrical</b>							
Replace 200A, 120/240V branch panel	2	ea	\$3,417.98		\$6,836	X	
600A main distribution panel	1	ea	\$11,434.68		\$11,435	X	
Fire alarm system upgrades (replacement of headend, smoke detectors, and rewiring)	11372	sf	\$1.75		\$19,901	X	
			<b>TOTAL COST</b>	<b>\$18,271</b>			

<b>Plumbing</b>							
Replace 50 gallon gas water heater, provide seismic bracing	1	ea	\$1,802.21		\$1,802	X	
Repair carbon steel gas piping: Paint exterior gas piping on rooftop units to limit corrosion	30	lf	\$15.54		\$466	X	
Repair wall hung lavatory: Add aerator to restrict flow to 0.5 gpm and repair leak	4	ea	\$1,988.64		\$7,955	X	
Replace floor mounted toilets, update to 1.6 gpf	2	ea	\$1,988.64		\$3,977	X	
Architectural Finishes Allowance	1	ls	\$2,485.80		\$2,486	X	
			<b>TOTAL COST</b>	<b>\$16,686</b>			

All rates current as of June 2020. See cost analysis for itemized price listings.

TOTAL COST TO REPAIR \$1,497,200  
TOTAL COST TO REPLACE \$4,719,380  
=FCI **0.317245107**

I Priority Cost: \$ 34,801.20  
II Priority Cost: \$ 1,348,884.64  
III Priority Cost: \$ 133,415.37  
IV Priority Cost: \$ -

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

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**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1959.** Concrete Masonry Unit Building (RM1) with Flexible Diaphragm Roof. Roof is flat with glulam beams spanning to concrete columns in CMU walls.

Building Risk Category II

ASCE 41-13 Life Safety Performance Level

### Main Building Seismic Retrofit Cost Per Square Foot

\$55/sf (does not include costs for re-roofing)

Original structural drawings of the building could not be located. Assessment is based on a rapid visual survey of the structure only. The age of the building is estimated based on the construction of the adjacent swimming pool building and High School between 1969 and 1971. The walls of the building are CMU with 8" square concrete columns below each glulam roof beam and at about 16' on center parallel to the beams. Reinforcement in the walls is unknown. Windows exist between the top of the walls and the roof diaphragm at most locations. Small sections of wall extend full height on the east, west, and south faces of the building, but not the north face. Roof glulams are approximately 14' on center and likely have tongue and groove decking spanning between them.

### Summary of Seismic Structural Deficiencies (included in cost per square foot above)

- Unblocked diaphragm spans greater than 40 feet
- Connections of diaphragms to lateral system likely to need retrofit
- Connection of roof girders and ties to exterior walls and columns likely need retrofit
- Exterior north wall is not full height to engage the roof diaphragm
- Out of plane capacity of CMU walls unknown
- Lateral system connection to foundation unknown

### Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)

- Lighting structure suspended from ceiling in south classroom — not braced to structure
- Mechanical equipment on roof — not braced to structure
- Gas lines to mechanical equipment — do not have flexible connections
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced (specifically notice water heater at mezzanine level that is not braced)
- Partition walls — many partial height walls are not internally braced

### Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)

- None observed on site.

## PHOTO OF DEFICIENCIES



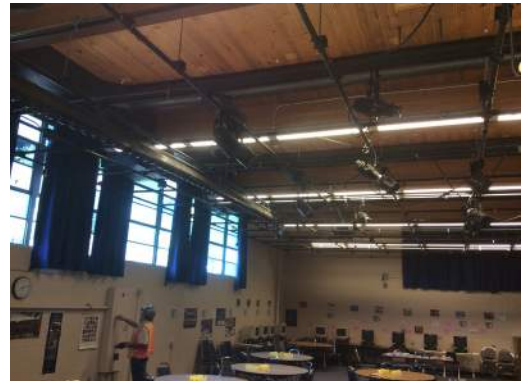
FALL PRONE EQUIPMENT



LACK OF SEISMIC CONNECTION AND  
BEAM SUPPORT



HARD CONNECTED GAS LINES



UNBRACED HANGING EQUIPMENT



LACK OF LATERAL SUPPORT AT BUILDING END



UNKNOWN CANOPY CONNECTION

# SWIMMING POOL

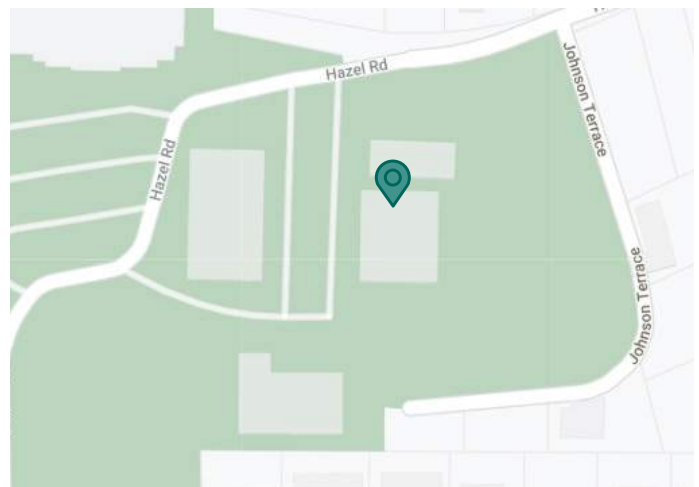
## FACT SHEET



The Swimming Pool building serves the entire Lake Oswego School District. It is considered a family-oriented facility and is also used for recreational purposes.

The cedar wood roof decking needs to be replaced in its entirety. The roof needs to be replaced in order to raise the slope to drain properly. The cedar plank siding should be replaced due to age and showing signs of bowing in some areas.

At the time of this assessment, design for a full replacement of the swimming pool was underway.



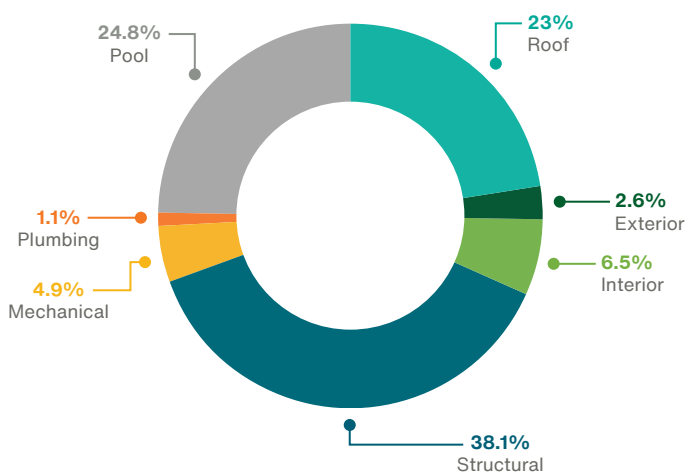
2400 Hazel Road  
Lake Oswego, OR 97034

17

### SWIMMING POOL

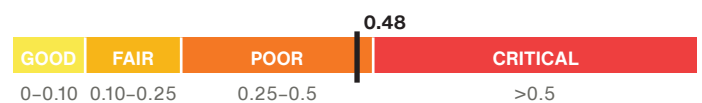
YEAR BUILT	1971, 1991
REMODELS	None
BUILDING AREA	13,260 SF
TOTAL HEIGHT	28'
NUMBER OF FLOORS	1
OCCUPANCY	A-3
PRIMARY STRUCTURE	CMU, Steel Frame
ROOF TYPE	TPO, Ballast
FLOOR FINISHES	Carpet Tile, VCT
CEILING FINISHES	Wood Decking
PARTITION TYPE	Gyp. Board over Wood Stud
HVAC TYPE	Constant Volume AHU

### FACILITY REPAIR COST ALLOCATION



Repair costs totaling less than 0.1% are not included.

### FACILITY CONDITION INDEX



FCI = COST TO REPAIR (\$)/COST TO REPLACE(\$)

## DRAWINGS

Building plan not included in this report.



## COST ESTIMATE SUMMARY AND FCI

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY			
				I	II	III	IV
Architectural Roof							
Remove debris from scupper collector head	1	ea	\$124.29	\$124			X
Replace 4" cedar wood decking in its entirety	18695	sf	\$17.40	\$325.304		X	
Provide new SBS BUR roofing and sheet metal accessories, to meet current energy code. Roof replacement due to seismic rehabilitation work	18695	sf	\$24.86	\$464,720		X	
Provide roof hatch ladder and safety rail	1	ea	\$3,728.70	\$3,729	X		
Provide fall protection, assume post & cable system	1	ls	\$31,072.50	\$31,073	X		
Refinish steel ladder	20	lf	\$621.45	\$12,429			X
Reinstall conduit in metal sleeves and installed on 8" high PT blocks	150	lf	\$49.72	\$7,457		X	
Replace through wall scupper and downspout	8	ea	\$870.03	\$6,960		X	
Add new through wall scupper	1	ea	\$1,242.90	\$1,243		X	
Clean out downspout collector heads	2	ea	\$124.29	\$249		X	
TOTAL COST			\$853,288				

<b>Architectural Exterior</b>								
Repaint HM door and frame	3	ea	\$155.36	\$466			X	
Replace door knob with lever handle	3	ea	\$621.45	\$1,864			X	
Replace single pane windows (3' x 7')	23	ea	\$1,615.77	\$37,163			X	
Rebuild wood framed half wall (42" tall)	43	lf	\$43.50	\$1,871		X		
Replace concrete block top course below windows	9	ea	\$62.15	\$559		X		
Replace 6" cedar plank siding and wall insulation	2304	sf	\$22.37	\$51,546		X		
Clean louver	100	sf	\$1.24	\$124			X	
Clean debris from loading dock area	100	sf	\$2.49	\$249				X
Remove rust and repaint concrete post in concrete. Concrete has spalled away	1	ea	\$124.29	\$124		X		
Remove vegetation growing on wall	127	sf	\$12.43	\$1,578		X		
Clean cedar siding	200	sf	\$2.49	\$497		X		
Seal 3" gap between sidewalk and concrete block pilaster	10	lf	\$6.21	\$62			X	
Replace wood soffit	51.25	lf	\$24.86	\$1,274		X		
Replace exterior junction box	1	ea	\$310.73	\$311		X		
Replace corroded call box	1	ea	\$310.73	\$311		X		
<b>TOTAL COST</b>				<b>\$97,999</b>				

RECOMMENDATIONS	QUANTITY	UNIT COST	COST	PRIORITY				
				I	II	III	IV	
Architectural Interior								
Patch and repaint gypsum plaster wall	20	sf	\$2.49	\$50		X		
Repaint gypsum plaster wall	4292	sf	\$1.24	\$5,335		X		
Replace HM door and frame	1	ea	\$2,237.22	\$2,237		X		
Replace glass patio door with commercial sliding door	35	ea	\$6,214.50	\$217,508		X		
Replace door knob with lever	8	ea	\$621.45	\$4,972			X	
Repaint HM door and frame	3	ea	\$186.44	\$559		X		
Replace carpet tile; install new rubber base	456	sf	\$8.70	\$3,967		X		
Replace 4x6 whiteboard	1	ea	\$497.16	\$497			X	
Provide gasket at door bottom	1	ea	\$124.29	\$124		X		
Replace metal cover over utility lines	44	lf	\$31.07	\$1,367		X		
Treat wood beam due to water damage	16	lf	\$31.07	\$497		X		
Replace gyp bd between columns with water resistant wall material	100	sf	\$18.64	\$1,864		X		
Repaint CMU wall	208	sf	\$1.24	\$259		X		
Replace handrail	5	lf	\$49.72	\$249		X		
Refinish concrete floor	81	sf	\$1.86	\$151		X		
Replace wire molding	6	lf	\$18.64	\$112		X		
Replace rubber base	17	lf	\$3.73	\$63		X		
Install exposed wiring in anti-corrosive sleeve	0.5	lf	\$24.86	\$12		X		
TOTAL COST				\$239,823				

<b>Site</b>								
Replace wood fencing on metal guard rail, 4' high	39	lf	\$24.86	\$969		X		
<b>TOTAL COST</b>				<b>\$969</b>				

<b>Structural</b>								
Repair foundation at CMU columns	10	cf	\$31.07	\$311		X		
Replace aluminum beams	80	lf	\$62.15	\$4,972		X		
Replace aluminum beams (88 ft)	2	ea	\$5,593.05	\$11,186		X		
Seismic rehabilitation work as the sole building upgrade (not including cost for re-roofing)	18696	sf	\$74.57	\$1,394,236		X		
<b>TOTAL COST</b>				<b>\$1,410,704</b>				

<b>Mechanical</b>								
Repair SA & RA/EA package by Pace, has issues but repairable	1	ea	\$13,671.90	\$13,672		X		
Replace roof top HV unit MAU-1	1	ea	\$30,451.05	\$30,451		X		
Repair roof top centrifugal exhaust fan: replace belt EF-1	1	ea	\$4,101.57	\$4,102		X		
Repair roof top centrifugal exhaust fan: replace belt EF-2	1	ea	\$4,101.57	\$4,102		X		
Replace sidewall centrifugal exhaust fan	1	ea	\$7,705.98	\$7,706		X		
Repair supply, return & exhaust air distribution: duct to be repaired and sealed	5	lf	\$124.29	\$621		X		
Replace natural gas hot water boiler B-1	1	ea	\$50,958.90	\$50,959		X		
Replace roof top centrifugal exhaust fan over pool	3	ea	\$22,372.20	\$67,117		X		
Architectural Finishes Allowances	1	ls	\$1,242.90	\$1,243		X		
<b>TOTAL COST</b>				<b>\$179,972</b>				

<b>Electrical</b>								
None at this time.								
<b>TOTAL COST</b>				<b>\$0</b>				

RECOMMENDATIONS					PRIORITY			
	QUANTITY	UNIT COST	COST		I	II	III	IV
Plumbing								
Repair wall hung lavatory: Add aerators to get 0.5 gpm flow	8	ea	\$1,988.64	\$15,909		X		
Replace floor mounted toilets with 1.6 gpf standard	8	ea	\$1,988.64	\$15,909		X		
Provide accessible drinking fountain	1	ea	\$3,728.70	\$3,729		X		
Replace floor mounted urinals with 1 gpf standard	3	ea	\$1,988.64	\$5,966		X		
Architectural Finishes Allowances	1	ls	\$621.45	\$621		X		
TOTAL COST				\$42,134				

<b>Pool Deck Items</b>								
Replace pool deck and provide a finish that is slip resistant under dry and wet conditions with no trip hazards or obstructions. Correct pool deck slope to properly drain water away from the pool edge and to the deck drainage system	5000	sf	\$37.29	\$186,435		X		
Replace pool deck drainage system to ensure that there is not standing water, low spots, or ponding on the pool deck	325	lf	\$74.57	\$24,237		X		
Provide new slip-resistant horizontal depth markings and warning signs at no more than 25'-0" intervals	16	unit	\$310.73	\$4,972		X		
Replace grab rails and associated anchors, and provide escutcheon plates for anchors	4	unit	\$3,107.25	\$12,429		X		
Replace portable ADA lift with new fixed battery operated ADA compliant lift with carrying caddy, folding arm rests, belt, foot rest, spineboard attachment and spare battery	1	unit	\$8,078.85	\$8,079		X		
Replace diving 1-meter board and stand. Relocate to the starting block side of pool to provide adequate deck clearance behind the board	1	ls	\$18,643.50	\$18,644		X		
Replace starting blocks and anchors. Provide track start platforms with side step for easier access	8	unit	\$3,728.70	\$29,830		X		
Provide cone shaped plastic safety covers for all starting blocks when they are not in use	8	unit	\$310.73	\$2,486		X		
<b>TOTAL COST</b>				<b>\$287,110</b>				

<b>Pool Items</b>								
Sandblast and remove existing epoxy paint pool finish down to bare concrete. Repair any cracks and imperfections in the concrete pool shell.	5800	sf	\$2.49	\$14,418		X		
Replace epoxy paint pool finish	5800	sf	\$4.97	\$28,835		X		
Fix pool floor slope to have code compliant 1:3 slope to depths greater than 5'-0" Deepen deep end to meet minimum recommended water depths for diving (12'-0") and starting blocks (6'-6")	1	ls	\$186,435.00	\$186,435		X		
Provide two (2) new 18"x36" VGB compliant main drains with 3'-0" minimum spacing between	2	unit	\$12,429.00	\$24,858		X		
Provide new vertical depth markings and warning signs at no more than 25'-0" intervals on face of gutter	16	unit	\$310.73	\$4,972		X		
Provide 4" contrasting band and safety rope at 5'-0" water depth contour and slope break	1	ls	\$2,485.80	\$2,486		X		
<b>TOTAL COST</b>				<b>\$262,003</b>				

RECOMMENDATIONS	QUANTITY	UNIT	COST	COST	PRIORITY			
					I	II	III	IV
Pool Mechanical Items								
Replace all related exposed pool piping (pressure, suction, gravity and chemical feed) with Schedule 80 PVC piping in the pool mechanical room and pool tunnel	1	ls	\$87,003.00	\$87,003		X		
Provide color coded directional arrows on all piping in mechanical room and tunnel. Install valve tags on all valves and provide a posted piping and valve schematic	1	ls	\$1,864.35	\$1,864		X		
Replace recirculation pump, hair and lint strainer, vacuum gage and pressure gauge. Pump should have the following characteristics: 15 HP, 600 gpm @75' TDH, 1750 rpm, 3 Phase Premium Efficiency Motor, TEFC, close-coupled and end suction. Provide spare basket for hair and lint strainer	1	unit	\$12,429.00	\$12,429		X		
Provide aquatics programmed VFD to match the new recirculation pump electrical demand	1	unit	\$12,429.00	\$12,429		X		
Replace flow meter with digital magmeter style flow meter with digital readout on the pool return line after the filters and connect to the VFD and pool chemical controller	1	unit	\$1,242.90	\$1,243		X		
Provide a new high rate sand filtration system capable of handling a flow rate of 600 gpm. Filter system should have the following characteristics: NSF, total system filter area of 50.0 sf, filtration rate of 12.0 gpm/sf of filter area	2	unit	\$31,072.50	\$62,145		X		
Replace surge tank with new reinforced concrete surge tank in the mechanical room. Disconnect main drain suction piping from surge tank and connect to suction side of recirculation pump with balancing valve. Provide new gravity gutter dropout piping to surge tank. Provide access ladder rungs on exterior and interior of tank with a bilco type access hatch in the surge tank lid. Provide a tank vent to the building exterior. Completely waterproof interior of surge tank and conduct a water tightness test. The suction line from the surge tank to the recirculation pump should have an anti-vortex plate in the surge tank	1	ls	\$49,716.00	\$49,716		X		
Provide sealed, ventilated and fire rated chemical storage rooms for the pool chemical delivery stems.	100	sf	\$310.73	\$31,073		X		
Replace chemical controller with new chemical controller that can control automatic filter backwashing and interface with the recirculation pump VFD for optimum energy efficiency	1	unit	\$12,429.00	\$12,429		X		
Provide an ultraviolet light (UV) disinfection and dechloramination system for tertiary water treatment to help maintain better water and air quality in the natatorium	1	unit	\$49,716.00	\$49,716		X		
Provide an automatic water level control system complete with a monitor located in the pool mechanical room, surge tank mounted sensors for normal and high water levels	1	ls	\$3,107.25	\$3,107		X		
Provide a water totalizer meter for the domestic fill water system for the pool with a digital readout	1	unit	\$1,864.35	\$1,864		X		
Provide housekeeping pads and proper anchorage for all pool equipment (e.g. pump, filters, etc.)	1	ls	\$6,835.95	\$6,836			X	
TOTAL COST				\$331,854				

All rates current as of June 2020. See cost analysis for itemized price listings. Replacement cost based on 13,260sf.

TOTAL COST TO REPAIR \$3,705,857  
TOTAL COST TO REPLACE \$7,758,840  
=FCI **0.477630337**

## PRIORITY LEVELS

**Level I:** Highest Priority; Issues that affect the immediate life safety concerns of the occupant, related to notification of occupants to emergency situations and the ability to safely evacuate the facility; subcomponents of Level I include safety concerns such as electrical loads, hazardous materials that might be affected with remodel or modifications, lack of fall protection. Level I items need to be addressed within a 5-year plan.

**Level II:** Moderate Priority; Issues that are related to the integrity and adequacy of systems within the building to sufficiently withstand a major event and still function; also related are the age of systems or building components that keep day to day operations running without constant repair. Issues may include mechanical, electrical and plumbing systems, fire suppression, lighting and security, as well as flooring, windows doors and other architectural components. Level II Items may be part of a 5-year plan.

**Level III:** Lower Priority; Issues that may affect the day to day maintenance of the building or long term health of the occupants. Issues also include access and clearances at equipment and fixtures, access for individuals with disabilities and both indoor and exterior environment quality. Level III Items would be considered in a 5 to 10 year plan.

**Level IV:** Issues that are related to the aesthetics of both the building's interior and exterior as well as integrity and adequacy of building systems that don't pose any issues or nearing the end of their remaining lifecycles. These may include items such as cabinetry original to the building that have signs of wear or dated finishes but do not have any damage or deterioration. Level IV items would be considered long-term plans.

**DISCLAIMER** The FCI number does not include: site repairs and site replacement, fire life safety component associated with building systems such as dampers, etc. Specific details about electrical panels, mechanical equipment and plumbing equipment that is not directly visible. Systems embedded below grade, within walls or roofing systems, contingencies, inflation, general conditions, permits and design fees. The cost to replace is based on local industry standards of project of similar size and complexity. The site cost to replace is based on \$255/sf.

## STRUCTURAL SHEET

Information provided by KPFF

**Constructed in 1971, with a boiler room addition in 1991.**

Concrete Masonry Unit (RM1) and Steel Braced Frame (S2A) Building with Flexible Diaphragm Roof. Roofs are flat with glulam beams spanning to masonry columns.

Building Risk Category II

ASCE 41-13 Life Safety Performance Level

### **Main Building Seismic Retrofit Cost Per Square Foot**

\$60/sf (does not include costs for re-roofing)

The original structural drawings showed an orientation of the building different than what was observed on site. The materials on the drawings included concrete columns and beams as well as wood shear walls that were not constructed as indicated. As built drawings from around 1971 (sheet S202-R) indicated that the roof diaphragm was changed to plywood sheathing from tongue and groove sheathing and the pool room walls are steel bar braces instead of plywood sheathing above soundblock CMU. Lack of clarity from the available drawings required assumptions as to the capacity of the structure; however, destructive testing to verify materials would likely not lead to any better results.

### **Summary of Seismic Structural Deficiencies (included in cost per square foot above)**

- Unblocked diaphragm spans greater than code limit
- Connections of diaphragms to lateral system likely to need retrofit
- Connection of roof girders and ties to exterior walls and columns likely need retrofit
- Continuity of steel bar bracing to soundblock CMU likely to need retrofit
- Exterior walls of lower north wing are not full height to engage the roof diaphragm
- Out of plane capacity of CMU columns and soundblock CMU walls with wood framed tops at pool area unknown
- Out of plane capacity of CMU walls in locker room area unknown
- Lateral system connection to foundation unknown

### **Summary of Seismic Nonstructural Deficiencies (included in cost per square foot above)**

- Mechanical equipment on roof — not braced to structure
- Gas lines to mechanical equipment — do not have flexible connections
- Fall-prone contents — contents weighing more than 20 pounds whose center of mass is above four feet are not braced. (Lockers, file cabinets, etc...recommend bracing)
- Fall-prone equipment — equipment weighing more than 20 pounds whose center of mass is above four feet is not braced
- Interior masonry partition walls at the locker room area were not visibly braced to the roof diaphragm

**Other Structural Deficiencies (NOT included in cost per square foot above, but itemized in Cost Estimate Summary)**

The costs for the following repairs are not included in the above estimates since they are not considered necessary for seismic rehabilitation. See the plans with field notes for more information.

- Approximately 10% of the foundations at CMU columns may have undermined foundations that need to be repaired. Settlement was not apparent at this time. Assume 10 cubic feet of structural grout will need to be formed and poured
- The glulam beams above windows on the north exterior of the locker rooms showed signs of deflection and rotation. They should be reviewed and replaced as needed. Assume 80' of beams will be replaced
- The condition of the roof decking and glulam beams in the pool room and locker room areas should be tested to determine where rot and water damage has occurred. Until additional testing is completed by a third party, assume that 100% of the roof decking and (2) of the approximately 88' glulam beams and their connections will need to be replaced



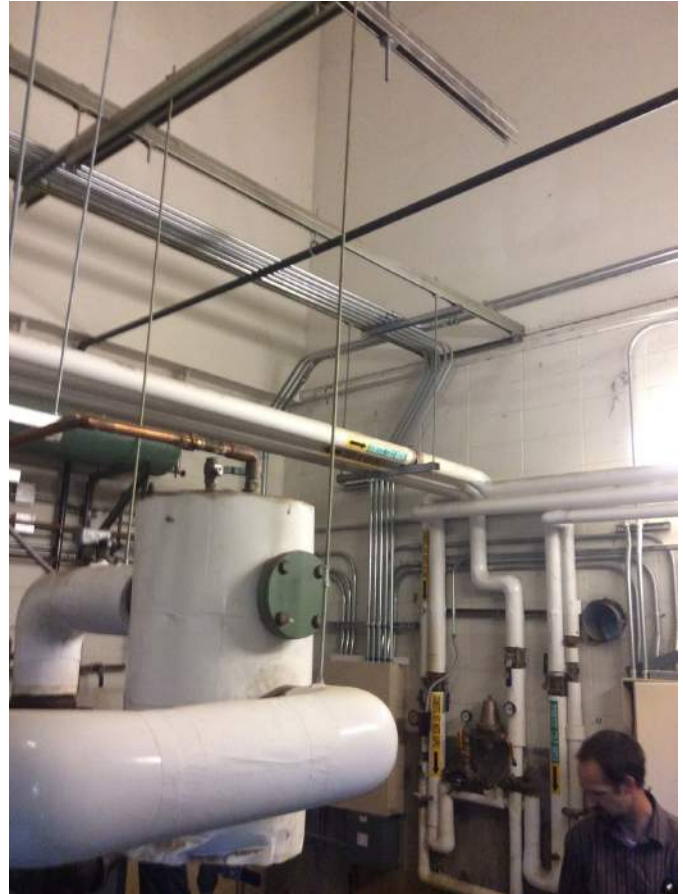
## PHOTO OF DEFICIENCIES



COLUMN UNDETERMINED



DETERIORATION OF WALL MATERIAL



FALL PRONE EQUIPMENT



DISCONTINUOUS CMU WALL



HARD CONNECTED GAS LINE

## PHOTO OF DEFICIENCIES (CONTINUED)



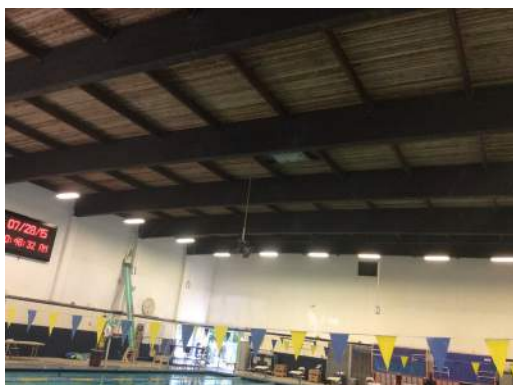
LACK OF LATERAL SUPPORT AT BUILDING SITE



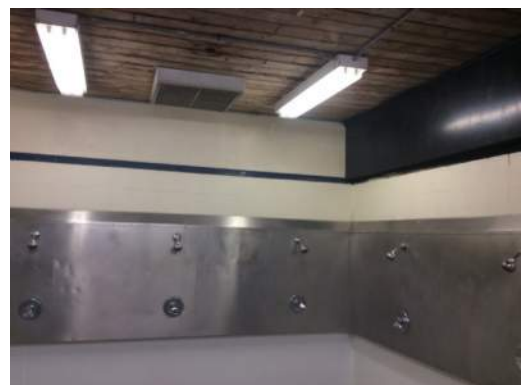
SAGGING AND TWISTING WOOD BEAMS



PIPING BRACING

UNKNOWN WOOD DEGRADATION AND  
DIAPHRAGM CONNECTION

ROOF BEAM CONNECTIONS TO COLUMNS

UNKNOWN OUT-OF-PLANE SUPPORT FOR  
CMU WALL

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