

Lake County School District R-1  
Facility Assessment Report

# WEST PARK ELEMENTARY SCHOOL



October 12, 2018



## WEST PARK ELEMENTARY SCHOOL ARCHITECTURAL FACILITY ASSESSMENT

**Overview:**


West Park Elementary School is an approximately 41,000 square foot 1-story steel and masonry building with grade beams and a slab on grade, constructed in 1962. The building currently houses grades Kindergarten through 2<sup>nd</sup>. In addition to the classrooms, the building contains a fully functioning kitchen, gymnasium, and stage. The arrangement of classrooms is traditional, with community and collaboration spaces limited to areas such as the gym and cafeteria. There is separation on site between parking and drop-off, however no separation exists between parent and bus drop-off. A playground remodel was completed in 2016 through the award of a GOCO grant, and a reroof done in 1997.

The current facility has been well maintained despite its age. However, many elements are beyond their life cycle and need to be replaced within the next 5 years. In addition, ADA accessibility is limited, both at the exterior and interior of the facility. Note that due to the age of this building, reroofing or any type of other significant remodel would require full evaluation of the existing structural diaphragm and capacity with a requirement to bring it up to current code.



Note that the Colorado Department of Education completed a full site and facility assessment in 2016; that report is attached. That report indicates an FCI of 0.65, making this building a candidate for replacement. The assessment below is intended to supplement the CDE report, not replace it. In addition, a structural assessment was completed in 2016, and is also attached to the end of the assessment.

In conjunction with the CDE report, consideration of the following additional items should be taken if the building is to remain in service.


**Assessment**

DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-1	The existing TPO membrane roof has exceeded its 20 year life span, and should be replaced.				





DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
					
A-2	Roof scuppers along the perimeter of the building lack proper metal flashing drip edges, and as such have contributed to water damage at fascias and soffits. It is recommended that metal flashing be installed as part of the re-roofing, and fascias and soffits repaired or replaced.		X		





DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-3	Aluminum windows appear to be original to the building, with areas of condensation noted. It is recommended that all windows are replaced with new high performance aluminum windows and glazing.			X	





DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-4	There is no ADA signed parking and paths on site. Recommend installation of a minimum of 2 ADA parking stalls adjacent to the main entry.		X		
A-5	Multi fixture restrooms in the building are not ADA accessible. In addition, the fixtures and partitions are beyond their useful life. It is recommended that the restrooms are remodeled to incorporate full accessibility requirements.		X		




DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
					
A-6	The stage curtains show signs of wear and tear, and are beyond their useful life and should be replaced. In addition, no safety barrier exists between the cafeteria and the edge of stage. Recommend providing a folding acoustic partition between the stage and gym.		X		




DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
					
A-7	All classrooms appear to have the proper panic function lever type locks; however, other areas existing where non ADA hardware is in use. Recommend replacing all door knobs with levers.		X		

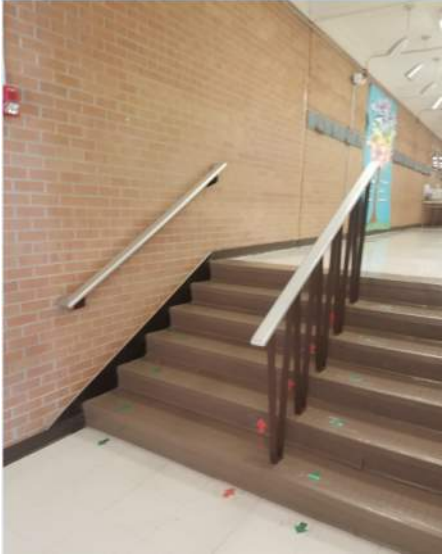



DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-8	Casework is original to the building, and there are several areas where the plastic laminate is damaged. In addition, there are many areas where it is not ADA accessible. It is recommended that all casework in the building is replaced.			X	







DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-9	Many wood doors show signs of damage, wear and tear. It is recommended that all interior doors in the building are replaced.		X		

DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-10	Handrails do not meet current accessibility requirements. It is recommended that these be replaced.		X		
A-11	Carpeting throughout building is still in serviceable condition, however it is nearing the end of its life cycle. Replacement throughout recommended.		X		



DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
A-12	Ceilings throughout are original 12"x12" tile, with some areas missing tiles or with damaged tiles. Recommend providing new dropped acoustical ceiling tile system throughout for improved acoustics and appearance.				
A-13	Bell system is original to school. Recommend replacing with new Bell and PA system.				



## WEST PARK ELEMENTARY SCHOOL CIVIL FACILITY ASSESSMENT


**Overview:**

West Park Elementary School is an approximately 34,000 square foot building constructed in 1962. The building is currently served by water and sewer mains in the adjacent roads. Site improvements include asphalt parking in the northwest, joint bus and parent drop-off adjacent to the south property line, and playgrounds and landscaping on the east. The site generally slopes from east to west and utilizes minor storm drainage infrastructure to convey flows both off-site and to an infiltrating dry well.

The majority of asphalt drives and parking areas as well as the adjacent concrete walks are at the end of their useful life. Recent renovations, including the main entrance stairs and ADA ramp and playground, are generally in good shape.



While water and sanitary service connections appear to be functioning properly, they are at the end of their expected life. If the building is to be renovated, consideration should be taken towards the replacement of both these lines.

**Assessment**


DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
C-1	Asphalt in northwest parking lot and associated drives is at end of useful life. Recommend replacement.				



DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
C-2	Drop-off drive lane, parking lane, concrete island, and concrete walks along Right-of-Ways are in very poor condition and do not appear to conform to current ADA code. Recommend regrading and replacement.				

DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
C-3	Concrete stoops at several doors have experienced movement or damage and are out of conformance with current code. Recommend selective replacement.				
C-4	Playground drainage was noted to not function as intended. Small ponding occurs in softscape and at the installed dry well. Recommend remove and replace with positive drainage away from low points.				



DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
C-5	Concrete walks at playground are experiencing spalling. Recommend routine maintenance to extend service life.				
C-6	Water service line is at end of expected life. Recommend full replacement.				
C-7	Sanitary sewer service line is at end of expected life. Recommend full replacement.				


## WEST PARK ELEMENTARY SCHOOL STRUCTURAL FACILITY ASSESSMENT

**Overview:**

West Park Elementary School is a one-story building, designed by Wheeler & Lewis Architects and constructed in 1962. The roof is typically framed with wood decking on 2x10 wood joists spanning between steel wide flange beams that are supported on steel wide flange columns. At the classroom wings, the perimeter steel columns project from the building envelope and are exposed to the elements. The exterior walls are a combination of non-bearing multi-wythe masonry and window wall systems. The lateral force resisting system for the building appears to be the exterior and interior non-bearing multi-wythe masonry walls installed tight to the beams and columns, acting as shearwalls. The first floor of the building is a slab-on-grade and the foundation system is assumed to be spread footings.



In general the building appears to be in nominally acceptable structural condition.




**Assessment**

DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
S-1	The exterior steel columns and metal fascia around the perimeter appear to have been painted fairly recently. The paint is streaked but corrosion does not appear to be present. The roof membrane has been wrapped down onto the metal fascia and partially covers it. The exposed steel should be periodically inspected for signs of corrosion.	X			






DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
					
S-2	The exterior brick walls generally appear to be in good condition for the age of the building. There are a few isolated areas where weathered mortar joints or damaged brick could be repaired for visual reasons and to maintain the weather-resistant characteristics of the wall system.	X			

DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
					
S-3	The concrete retaining walls at the main entrance appear to be in good condition with only minor cosmetic cracking in isolated locations. The steel rails appear to have been painted fairly recently. The paint is streaked but corrosion does not appear to be present.	X			
S-4	Signs of wear and tear are evident at the loading dock. Repairs would be primarily for visual reasons and to maintain the weather-resistant characteristics of the walls.	X			



DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
S-5	Signs of interior slab-on-grade movement were not observed except for some minor separation of the vinyl floor covering in a few isolated locations, possibly due to slab contraction.	X			
S-6	Signs of foundation movement or distress were not observed.				
S-7	Due to snow on the ground, the condition of the elastomeric sealant between the building and abutting sidewalks could not be observed. The elastomeric sealant should be evaluated and replaced where it has deteriorated.				
S-8	Due to snow on the ground, the grading around the perimeter of the building and whether it provides adequate drainage away from the foundation could not be observed. The grading should be evaluated and improved where drainage is inadequate.				



## **WEST PARK ELEMENTARY SCHOOL** **MEP FACILITY ASSESSMENT**

### **Overview:**

#### **Mechanical and Plumbing Systems**

West Park Elementary School is served via hydronic heating water boilers which distribute hot water to air handling units and unit ventilators throughout the facility. The heating water boilers were replaced approximately 10 years ago, and the remainder of the mechanical system was replaced approximately 5 years ago. Therefore, all mechanical systems in the building, including piping, controls and equipment are in excellent condition with many years of life expectancy remaining.

Domestic hot water is provided via gas fired water heaters. Plumbing fixtures are in good condition throughout, though would need to be updated to current ADA requirements as part of any major architectural renovation. All plumbing piping was replaced as part of the overall mechanical system replacement approximately 5 years ago.

The building is not equipped with a fire sprinkler system.

Vestibules are present at the facility, but overall the building envelope is poor and not compliant with current energy codes.

The mechanical and plumbing systems are in excellent condition and are not in need of replacement, apart from bringing older plumbing fixtures up to current ADA requirements. A fire sprinkler system would need to be installed to meet current codes if the building continues to be utilized.

#### **Electrical Systems**

The electrical service to the West Park Elementary School is 800 Amp, 208/120 Volt, Three Phase, 4 Wire, served by pad mounted utility transformer. The main distribution switchboard is located in the main electrical room. Panelboards are provided throughout the building to serve power, lighting, mechanical equipment, boiler room, kitchen equipment, and stage area. Generally, the original panelboards are located recessed in the wall within the area its serving. Newer panelboard, such as new panel in seating area, were surfaced mounted along the wall.

Limited amount of convenience receptacles is provided throughout the building. In addition, surface mounted wiremold, outlets, and power strips had been added throughout the years to accommodate user's need in classrooms, corridors, offices, work area, etc. For lighting, generally, 2x2 surface mounted troffer (with T8-U lamping) and linear surface mounted louvered fluorescent is provided throughout spaces, such as corridors, classrooms, seating area, library, music and art classrooms, restrooms, etc. Multi-level/dual level manual toggle switches are provided in each area. Gymnasium lighting is controlled directly from breakers within panelboard. Emergency lighting and exit signs are provided with individual battery unit in path of egress. Wall mounted area lights are provided throughout the perimeter of the building for general site lighting and parking lot lighting. Notifier Fire Alarm System were added to the building to provide full coverage. This includes smoke detection, horn/strobes, and pull stations throughout the building.




Although the newer panelboards are in good condition, most of the areas are served by the original panelboards, which utilized ITE equipment and not many spares or spaces available within each panel. New panelboards would be required to replace existing if additional equipment/devices to be added.



We recommend that existing fluorescent 2x2 and linear fluorescent fixtures to be replaced with LED replacement lamps or LED fixtures. Less fixtures might be adequate for the required light level for each space. Exterior area lights are replaced with wall or pole mounted fully cutoff area lighting to provide better coverage for parking lot and building perimeter.

If modification required for the existing fire alarm system, new voice evacuation system would be required to meet the new 2015 International Fire Code.



**Assessment**

DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
MP-1	Newer boiler installation.	X			




DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
MP-2	Piping replacement, note overhead soffited distribution to replace previously installed underslab piping. (Ref. Pitts Elementary.)				
E-1	Original panelboard were provided with ITE with not many spares/spaces available for additional loads. We recommend that existing panelboard to be replaced with new.	X			



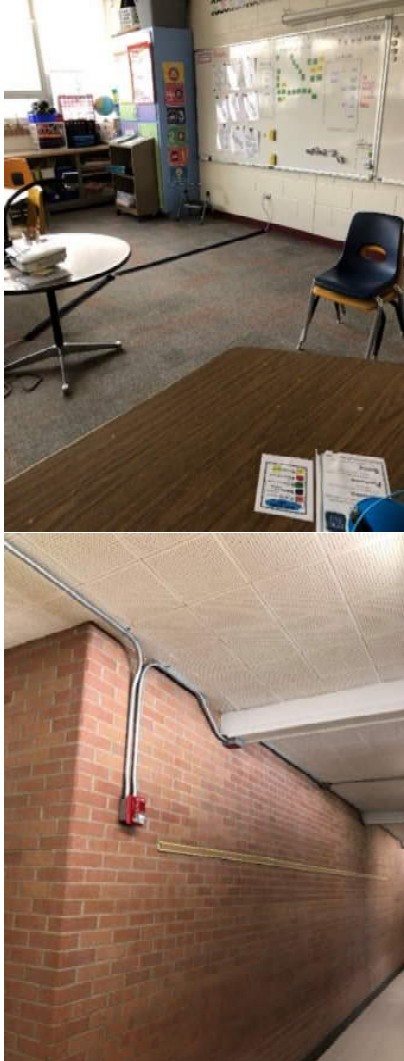
DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
E-2	Existing fluorescent lighting in art/music classroom seems to be a bit excessive. We recommend replacing it with LED and less fixture quantity.	X			
E-3	Existing battery packs were added throughout interior path of egress. Exterior emergency fixtures would need to be provided on all exterior egress doors since it is required by code.			X	



DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
E-4	Existing horn/strobes would need to be replaced with new speaker strobes to accommodate voice evacuation system, if modification is required for fire alarm system.			X	





DISC. ITEM #	OBSERVATION / ISSUE / ITEM DESCRIPTION	PRIORITY LEVEL			PHOTOS
		LOW	MED	HIGH	
E-5	Existing power strips were provided to serve additional power requirement in classrooms, etc. We recommend providing additional outlets in each classroom.		X		

# Colorado DOE Facility Insight Dashboard

Sunday, March 11, 2018 7:13 PM



**COLORADO**  
Department of Education

Lake County R-1, Westpark ES

## Westpark ES Main



State Level | District Level | Campus Level | **Asset Level** | Search: | Glossary

### Systems Requirements



[B1015 - Exterior Stairs and Fire Escapes](#)

#### Exterior Stairs - Concrete Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$17,868

#### Description

Auto generated renewal for Exterior Stairs - Concrete.  
System Description: Exterior concrete stairs (6' wide x 5 risers) with railing. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[B2020 - Exterior Windows](#)

#### Aluminum Windows Renewal

Action 2020  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$589,158

#### Description

Auto generated renewal for Aluminum Windows. System Description: The building includes aluminum framed exterior units with insulating glass. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[B2030 - Exterior Doors](#)

#### Automatic Openers - Single Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$19,822

#### Description

Auto generated renewal for Automatic Openers - Single. System Description: Door hardware add-ons, automatic openers, commercial, electronic door opener, for single swing door, per opening, incl. motion sensor, 12V control box, motor, handicap actuator buttons and wiring. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[B2030 - Exterior Doors](#)

#### Door Assembly - 3 x 7 HM Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

#### Description

Auto generated renewal for Door Assembly - 3 x 7 HM. System Description: Exterior doors include 3 x 7 steel door and steel frame with hinges, lockset (lever), exit hardware and closer. Includes painted door and painted frame. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Cost: \$141,934



[B30 - Roofing](#)

### Single-Ply Membrane - Fully Adhered Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$615,267

#### Description

Auto generated renewal for Single-Ply Membrane - Fully Adhered. System Description: The roof covering is of a single-ply fully adhered membrane with insulation. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[B3022 - Roof Hatches](#)

### Roof Hatch Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$4,461

#### Description

Auto generated renewal for Roof Hatch. System Description: Roof hatch with insulated curb. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C1010 - Partitions](#)

### Interior Windows Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$125,360

#### Description

Auto generated renewal for Interior Windows. System Description: Building interior includes windows. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C1010 - Partitions](#)

### CMU Block Walls - Plain Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$105,859

#### Description

Auto generated renewal for CMU Block Walls - Plain. System Description: Interior walls are of 8-in. hollow concrete block, light and regular weight, with no finish. Years remaining have been increased because the system is currently functioning, however the system is beyond its useful life and should be budgeted for replacement.



[C1010 - Partitions](#)

### CMU Walls - Glazed 2 Sides Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$315,183

#### Description

Auto generated renewal for CMU Walls - Glazed 2 Sides. System Description: The building interior includes 8-in. x 16-in. x 8-in. CMU partitions with glazing two sides. Years remaining have been increased because the system is currently functioning, however the system is beyond its useful life and should be budgeted for replacement.



[C1020 - Interior Doors](#)

### Swinging Doors - 3 x 7 Wd Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$361,567

### Description

Auto generated renewal for Swinging Doors - 3 x 7 Wd. System Description: Interior doors include rated 3 x 7 wood door and steel frame with vision lite, hinges, lockset (lever), panic hardware and closer. Includes painted (stained) door and painted frame. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C1030 - Fittings](#)

### Restroom Accessories Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$69,186

### Description

Auto generated renewal for Restroom Accessories. System Description: The restroom accessories include mirror, grab bars, paper towel dispenser, toilet paper holder and soap dispenser. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C1030 - Fittings](#)

### Toilet Partitions Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$82,805

### Description

Auto generated renewal for Toilet Partitions. System Description: Restrooms are equipped with standard quality, ceiling and wall hung partitions. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C3010 - Wall Finishes](#)

### Painted Finish Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$51,120

### Description

Auto generated renewal for Painted Finish. System Description: Interior wall finishes include standard paint finish. Years remaining have been increased because the system is currently functioning, however the system is beyond its useful life and should be budgeted for replacement.



[C3020 - Floor Finishes](#)

### Carpeting - Broadloom - Medium Range Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$348,705

### Description

Auto generated renewal for Carpeting - Broadloom - Medium Range. System Description: Floor finishes include medium priced carpeting and base in classrooms. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C3020 - Floor Finishes](#)

### VCT Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

### Description

Auto generated renewal for VCT. System Description: Floor finishes include areas of standard VCT flooring and related base. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Category: Lifecycle

Cost: \$59,956



[C3020 - Floor Finishes](#)

### Ceramic Tile Renewal

Action 2021

Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$84,525

### Description

Auto generated renewal for Ceramic Tile. System Description: Floor finishes include ceramic tile and base in restrooms. Years remaining have been increased because the system is currently functioning, however the system is beyond its useful life and should be budgeted for replacement.



[C3020 - Floor Finishes](#)

### Wood Flooring Renewal

Action 2021

Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$149,488

### Description

Auto generated renewal for Wood Flooring. System Description: Floor finishes include oak strip flooring, finished gym floors. Assumed on concrete over sleepers. Includes finished wood base. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C3030 - Ceiling Finishes](#)

### GWB Taped and Finished Renewal

Action 2021

Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$58,043

### Description

Auto generated renewal for GWB Taped and Finished. System Description: GWB ceiling system over 8-ft above floor taped, finished and painted with primer and 2 finish coats. Ceiling on suspension system or fastened to metal or wood furring. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[C3030 - Ceiling Finishes](#)

### ACT System - Concealed Spline Renewal

Action 2021

Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$341,333

### Description

Auto generated renewal for ACT System - Concealed Spline. System Description: Concealed spline 12 x 12 x 3/4-in. Glued to GWB Ceiling. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D2010 - Plumbing Fixtures](#)

### Restroom Fixtures Renewal

Action 2021

Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$161,930

### Description

Auto generated renewal for Restroom Fixtures. System Description: The restroom fixtures include vitreous china urinals and water closets, vitreous china or molded lavatories and shower. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D2010 - Plumbing Fixtures](#)

### **Custodial/Utility Sinks Renewal**

**Action** 2021  
**Year:**

**Priority:** 3 - Due within 5  
Years of Inspection

**Category:** Lifecycle

**Cost:** \$21,229

### **Description**

Auto generated renewal for Custodial/Utility Sinks. System Description: The plumbing fixtures include custodial/utility sinks. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D2020 - Domestic Water Distribution](#)

### **Water Dist Complete Renewal**

**Action** 2021  
**Year:**

**Priority:** 3 - Due within 5  
Years of Inspection

**Category:** Lifecycle

**Cost:** \$173,361

### **Description**

Auto generated renewal for Water Dist Complete. System Description: The building domestic water distribution system includes a four inch main line, water meter, rpz backflow preventer, with rough ins included. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D2030 - Sanitary Waste](#)

### **Sanitary Waste Renewal**

**Action** 2021  
**Year:**

**Priority:** 3 - Due within 5  
Years of Inspection

**Category:** Lifecycle

**Cost:** \$150,081

### **Description**

Auto generated renewal for Sanitary Waste. System Description: The building includes a sanitary waste system, of cast iron piping, with gravity discharge to the municipal system. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D2040 - Rain Water Drainage](#)

### **Roof Drainage - Gravity Renewal**

**Action** 2021  
**Year:**

**Priority:** 3 - Due within 5  
Years of Inspection

**Category:** Lifecycle

**Cost:** \$115,433

### **Description**

Auto generated renewal for Roof Drainage - Gravity. System Description: Rain water drainage includes interior piping, roof drains and 4-inch discharge piping by gravity flow to a municipal main. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D3012 - Gas Supply System](#)

### **Natural Gas Service to Bldg - 4" Feed Renewal**

**Action** 2021  
**Year:**

**Priority:** 3 - Due within 5  
Years of Inspection

**Category:** Lifecycle

**Cost:** \$16,332

### **Description**

Auto generated renewal for Natural Gas Service to Bldg - 4" Feed. System Description: The building includes a natural gas supply to boilers, absorption chillers or kitchen. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D3040 - Distribution Systems](#)

### Exhaust System - Restroom Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$27,808

### Description

Auto generated renewal for Exhaust System - Restroom. System Description: HVAC ventilation system includes roof-mounted restroom exhaust fans with ducting. Years remaining have been increased because the system is currently functioning, however the system is beyond its useful life and should be budgeted for replacement.



[D3040 - Distribution Systems](#)

### Exhaust System - Kitchen Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$23,291

### Description

Auto generated renewal for Exhaust System - Kitchen. System Description: The ventilation system includes a kitchen exhaust system, with welded duct and insulation. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D3040 - Distribution Systems](#)

### Exhaust System - General Building Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$54,138

### Description

Auto generated renewal for Exhaust System - General Building. System Description: The HVAC ventilation system includes roof-mounted exhaust fans with ducting. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D40 - Fire Protection](#)

### Fire Extinguishers - Dry Chem w/Cabinet Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$1,994

### Description

Auto generated renewal for Fire Extinguishers - Dry Chem w/Cabinet. System Description: Handheld type dry chemical fire extinguishers are located throughout the building. Includes cabinets. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D40 - Fire Protection](#)

### Kitchen Hood Suppression Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$12,157

### Description

Auto generated renewal for Kitchen Hood Suppression. System Description: System includes a R-102 chemical fire suppression system for a typical commercial kitchen. Fire suppression includes fusible links, manual pull stations, 3 gallon tanks, nozzles, and control panels. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

No Picture Available

[D40 - Fire Protection](#)

### Add: Wet Sprinkler System - Ordinary Hazard w/Pump

#### Description

The building does not have a sprinkler system. One should be installed when required.

Action 0

Priority: 4 - Not Time Based

Category: Life Safety

Cost: \$386,165



[D5012 - Low Tension Service and Dist.](#)

### Distribution Equipment, Panelboards, and Feeders - 800A 208Y/120V-1962 Renewal

#### Description

Auto generated renewal for Distribution Equipment, Panelboards, and Feeders - 800A 208Y/120V-1962. System Description: The electrical distribution system for this building includes a concentration of panelboards, feeders, and associated equipment. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Action 2021  
Year:

Priority: 3 - Due within 5 Years of Inspection

Category: Lifecycle

Cost: \$282,079



[D5012 - Low Tension Service and Dist.](#)

### Main Electrical Service - 800A 208Y/120V Renewal

#### Description

Auto generated renewal for Main Electrical Service - 800A 208Y/120V. System Description: The building includes a typical electrical service, which includes incoming feeders, main panel, and metering. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Action 2021  
Year:

Priority: 3 - Due within 5 Years of Inspection

Category: Lifecycle

Cost: \$70,430



[D5020 - Lighting and Branch Wiring](#)

### Lighting - Exterior Wall Packs Renewal

#### Description

Auto generated renewal for Lighting - Exterior Wall Packs. System Description: Exterior lighting consists of HID wall pack units. Years remaining have been increased because the system is currently functioning, however the system is beyond its useful life and should be budgeted for replacement.

Action 2021  
Year:

Priority: 3 - Due within 5 Years of Inspection

Category: Lifecycle

Cost: \$11,630



[D5021 - Branch Wiring Devices](#)

### Branch Wiring - Equipment & Devices Renewal

#### Description

Auto generated renewal for Branch Wiring - Equipment & Devices. System Description: Branch wiring for this building includes a concentration of interior and exterior branch wiring, devices, and utilization equipment. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Action 2021  
Year:

Priority: 3 - Due within 5 Years of Inspection

Category: Lifecycle



Cost: \$143,048



[D5022 - Lighting Equipment](#)

### Lighting Fixtures Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$242,008

### Description

Auto generated renewal for Lighting Fixtures. System Description: The building includes a average density lighting system. Lighting system includes lighting fixtures, lamps, conduit and wire. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5022 - Lighting Equipment](#)

### Stage Lighting Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$108,608

### Description

Auto generated renewal for Stage Lighting. System Description: Stage lighting includes master control panel, spots, borders and stage lights. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5032 - Intercommunication and Paging System](#)

### Intercom System Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$76,169

### Description

Auto generated renewal for Intercom System. System Description: The building includes an intercom system. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5033 - Telephone Systems](#)

### Telephone System Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$146,328

### Description

Auto generated renewal for Telephone System. System Description: The building includes an average density telephone system. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5036 - Clock and Program Systems](#)

### Clock System Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$302,282

### Description

Auto generated renewal for Clock System. System Description: Centralized, automatic clock system for an average sized building. Clock system includes head end equipment, single and double sided clocks, conduit, wire, electrician and helper time, and fittings. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5037 - Fire Alarm Systems](#)

### Fire Alarm System Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$248,915

### Description

Auto generated renewal for Fire Alarm System. System Description: This building includes an average density fire alarm system. The fire alarm system includes: head end equipment, pull stations at all exit doors, audio/visual strobes, visual strobes, smokes in some rooms, conduit, wire and connections. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5038 - Security and Detection Systems](#)

### Security System - Burglar Alarm System Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$68,119

### Description

Auto generated renewal for Security System - Burglar Alarm System. System Description: The building includes a typical security system . The security system includes as a minimum: control panels, key pads, detection devices, conduit, and cabling. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5092 - Emergency Light and Power Systems](#)

### Exit Signs Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$32,255

### Description

Auto generated renewal for Exit Signs. System Description: The emergency lighting system includes the installation of Exit signs. Installation includes: single and double sided Exit signs, conduit, wire, boxes, conduit bends, connections and circuit breakers. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[D5092 - Emergency Light and Power Systems](#)

### Emergency Battery Pack Lights Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$43,852

### Description

Auto generated renewal for Emergency Battery Pack Lights. System Description: The emergency lighting system includes self-contained battery packs and lights. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[E - Equipment and Furnishings](#)

### Fixed Casework Renewal

Action 2021  
Year:

Priority: 3 - Due within 5  
Years of Inspection

Category: Lifecycle

Cost: \$221,695

### Description

Auto generated renewal for Fixed Casework. System Description: Building includes average plastic laminate casework including wall and undercounter cabinets and countertops, without appliances. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[E - Equipment and Furnishings](#)

### Kitchen Equipment Renewal

**Action** 2021

**Year:**

**Priority:** 3 - Due within 5 Years of Inspection

**Category:** Lifecycle

**Cost:** \$60,217

### Description

Auto generated renewal for Kitchen Equipment. System Description: Equipment and furnishings includes kitchen equipment of average quantity and quality. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



[E - Equipment and Furnishings](#)

### Stage Curtains Renewal

**Action** 2021

**Year:**

**Priority:** 3 - Due within 5 Years of Inspection

**Category:** Lifecycle

**Cost:** \$207,851

### Description

Auto generated renewal for Stage Curtains. System Description: The building includes a minimum amount of Stage curtains. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

## Total Asset Requirements Count and Costs\* by Action Year

*\* This asset has been assessed.*

For questions or additional information, please contact **Dustin Guerin**, Email: [guerin\\_d@cde.state.co.us](mailto:guerin_d@cde.state.co.us). Although every effort is made to ensure the accuracy, currency and completeness of the information, CDE does not guarantee, warrant, represent or undertake that the information provided is accurate or current. CDE is not liable for any loss, claim, or demand arising directly or indirectly from any use or reliance upon the information.

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# Colorado DOE Facility Insight Dashboard

Sunday, March 11, 2018 7:14 PM



**COLORADO**  
Department of Education

Lake County R-1, Westpark ES

## Westpark ES Site



State Level | District Level | Campus Level | **Asset Level** | Search: | Glossary

### Systems Requirements



G2013 - Curbs Gutters and Drains  
Site

#### Roadway - Curbs and Gutters - Cast-In-Place Concrete

Lifetime: 25

Year Installed: 1962

Years Remaining: 5

Number of [1 Show](#)  
Requirements:

Requirements Cost: \$47,073

Replacement Cost: \$37,658

SCI: 1.25

#### Description

Roadway includes cast-in-place concrete curbs and gutters at each side of roadway, 6-in. curbs and 18-in. gutters. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G2021 - Bases and Sub-Bases  
Site

#### Parking Lot Flexible Pavement - Base Course

Lifetime: 65

Year Installed: 1962

Years Remaining: 11

Number of 0  
Requirements:

Requirements Cost: \$0

Replacement Cost: \$38,979

SCI: 0.00

#### Description

Parking lot flexible pavement (bituminous) includes a 12" thick gravel base course for large paved areas.



G2021 - Bases and Sub-Bases  
Site

#### Parking Lot Flexible Pavement - Intermediate Course

Lifetime: 25

Year Installed: 1962

Years Remaining: 5

Number of [1 Show](#)  
Requirements:

#### Description

Parking lot flexible pavement includes a 3" thick bituminous intermediate binder course for large paved areas. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Requirements Cost: \$67,350

Replacement Cost: \$108,629

SCI: 0.62



G2022 - Paving and Surfacing Site

### **Parking Lot Flexible Pavement - Surface Course**

Lifetime: 25

Year Installed: 1962

Years Remaining: 5

Number of Requirements: 1 [Show](#)

Requirements Cost: \$149,100

Replacement Cost: \$119,280

SCI: 1.25

### **Description**

Parking lot flexible pavement includes a 2" thick bituminous wearing surface course for large paved areas. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G2031 - Paving and Surfacing Ungrouped

### **Pedestrian Pavement - Base Course -1962**

Lifetime: 75

Year Installed: 1962

Years Remaining: 21

Number of Requirements: 0

Requirements Cost: \$0

Replacement Cost: \$2,760

SCI: 0.00

### **Description**

Pedestrian pavement includes a 6" thick gravel base course for sidewalks.



G2031 - Paving and Surfacing Site

### **Pedestrian Pavement - Base Course -2016**

Lifetime: 75

Year Installed: 2016

Years Remaining: 75

Number of Requirements: 0

Requirements Cost: \$0

Replacement Cost: \$2,321

SCI: 0.00

### **Description**

Pedestrian pavement includes a 6" thick gravel base course for sidewalks.



G2031 - Paving and Surfacing Ungrouped

### **Pedestrian Pavement - Concrete - 1962**

Lifetime: 25

Year Installed: 1962

Years Remaining: 5

Number of Requirements: 1 [Show](#)

### **Description**

Pedestrian pavement includes 5" thick cast-in-place concrete sidewalk with 2" thick sand bedding. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

**Requirements:**

**Requirements Cost:** \$26,424

**Replacement Cost:** \$21,139

**SCI:** 1.25



G2031 - Paving and Surfacing Site

**Pedestrian Pavement - Concrete-2016**

**Lifetime:** 25

**Year Installed:** 2016

**Years Remaining:** 25

**Number of** 0

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$17,776

**SCI:** 0.00

**Description**

Pedestrian pavement includes 5" thick cast-in-place concrete sidewalk with 2" thick sand bedding.



G2041 - Fences and Gates Site

**Site Development - Fencing - Chain Link**

**Lifetime:** 20

**Year Installed:** 2016

**Years Remaining:** 20

**Number of** 0

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$36,902

**SCI:** 0.00

**Description**

Site development includes 10' high chain link fencing with 2" post.



G2048 - Flagpoles Site

**Site Development - Flagpole**

**Lifetime:** 25

**Year Installed:** 1962

**Years Remaining:** 5

**Number of** 1 [Show](#)

**Requirements:**

**Requirements Cost:** \$8,213

**Replacement Cost:** \$6,571

**SCI:** 1.25

**Description**

Site development includes aluminum flagpoles, direct imbedded, internal halyard, 30- ft high. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G2049 - Miscellaneous Structures Ungrouped

**Modular Playground Equipment**

**Lifetime:** 20

**Year Installed:** 2016

**Years Remaining:** 20

**Number of** 0

**Description**

Modular Playground Equipment.

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$113,889

**SCI:** 0.00



G2052 - Erosion Control Measures Site

**Landscaping - Mulching - Wood Chips**

**Lifetime:** 20

**Year Installed:** 2016

**Years Remaining:** 20

**Number of** 0

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$21,195

**SCI:** 0.00

**Description**

Landscaping includes erosion control measures applied in a large ground cover format that includes wood chips over weed barrier.



G2054 - Seeding and Sodding Ungrouped

**Landscaping - Grass Sodding -1962**

**Lifetime:** 25

**Year Installed:** 1962

**Years Remaining:** 5

**Number of** 1 [Show](#)

**Requirements:**

**Requirements Cost:** \$47,977

**Replacement Cost:** \$38,382

**SCI:** 1.25

**Description**

Landscaping includes graded, sodded grass areas. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G2054 - Seeding and Sodding Ungrouped

**Landscaping - Grass Sodding 2016**

**Lifetime:** 25

**Year Installed:** 2016

**Years Remaining:** 25

**Number of** 0

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$32,241

**SCI:** 0.00

**Description**

Landscaping includes graded, sodded grass areas.



G2055 - Planting Ungrouped

**Landscaping - Trees and Bushes -1962**

**Lifetime:** 50

**Year Installed:** 1962

**Years Remaining:** 5

**Number of** 1 [Show](#)

**Description**

Landscaping includes trees, bushes and shrubs located around site. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

**Requirements:**

**Requirements Cost:** \$460,820

**Replacement Cost:** \$368,656

**SCI:** 1.25



G2055 - Planting Site

**Landscaping - Trees and Bushes-2016**

**Lifetime:** 50

**Year Installed:** 2016

**Years Remaining:** 50

**Number of** 0

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$491,542

**SCI:** 0.00

**Description**

Landscaping includes trees, bushes and shrubs located around new playground area.



G2057 - Irrigation Systems Site

**Landscaping - Sprinkler System**

**Lifetime:** 25

**Year Installed:** 2016

**Years Remaining:** 25

**Number of** 0

**Requirements:**

**Requirements Cost:** \$0

**Replacement Cost:** \$17,079

**SCI:** 0.00

**Description**

Landscaping includes a commercial type irrigation system typical for lawns; estimated 2 inch supply.



G3011 - Potable Water Distribution and Storage Site

**Water Supply - Potable Water Distribution Piping**

**Lifetime:** 30

**Year Installed:** 1962

**Years Remaining:** 5

**Number of** 1 [Show](#)

**Requirements:**

**Requirements Cost:** \$15,021

**Replacement Cost:** \$15,021

**SCI:** 1.00

**Description**

Water supply includes underground potable water distribution piping with excavation and backfill. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.





G3014 - Fire Protection Distribution and Storage Site

### Water Supply - Fire Protection Distribution Piping

Lifetime: 30

Year Installed: 1962

Years Remaining: 5

Number of Requirements: [1 Show](#)

Requirements Cost: \$13,519

Replacement Cost: \$13,519

SCI: 1.00

### Description

Water supply includes underground fire protection water distribution piping with excavation, backfill, and fire hydrants. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G3021 - Piping Ungrouped

### Sanitary Sewer - Waste Water Piping

Lifetime: 50

Year Installed: 1962

Years Remaining: 5

Number of Requirements: [1 Show](#)

Requirements Cost: \$29,810

Replacement Cost: \$28,390

SCI: 1.05

### Description

Sanitary sewer includes underground waste water drainage piping; excludes manholes. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G3061 - Fuel Piping Site

### Fuel Distribution - Gas Service Piping

Lifetime: 30

Year Installed: 1962

Years Remaining: 5

Number of Requirements: [1 Show](#)

Requirements Cost: \$117,384

Replacement Cost: \$111,795

SCI: 1.05

### Description

Fuel distribution includes direct buried gas service piping. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.



G4013 - Underground Power Distribution Ungrouped

### Site Electrical Distribution - 300kVA Pad Mounted Transformer

Lifetime: 30

Year Installed: 1962

Years Remaining: 5

Number of Requirements: [1 Show](#)

### Description

Site electrical distribution includes a 300kVA pad mounted transformer rated at 25kV – 208/120, 3 phase, 4 wire, located on the west side of site. Extended life cycle because the system is still functioning, but the entire system is beyond its life cycle and should be budgeted for replacement.

Requirements Cost: \$42,791

Replacement Cost: \$34,232

SCI: 1.25

## **Total Asset Requirements Costs\*** by System Group

*\* This asset has been assessed.*

For questions or additional information, please contact **Dustin Guerin**, Email: [guerin\\_d@cde.state.co.us](mailto:guerin_d@cde.state.co.us). Although every effort is made to ensure the accuracy, currency and completeness of the information, CDE does not guarantee, warrant, represent or undertake that the information provided is accurate or current. CDE is not liable for any loss, claim, or demand arising directly or indirectly from any use or reliance upon the information.

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**STRUCTURAL  
CONSULTANTS  
INCORPORATED**

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3400 East Bayaud Avenue, #300  
Denver, CO 80209  
303/ 399 5154  
info@sci-denver.com

January 18, 2016

Ms. Stephanie Grose, AIA, CSI  
Associate  
H+L ARCHITECTURE, LTD.  
1755 Blake Street, Suite 400  
Denver, CO 80202

RE: West Park Elementary School Roof Peer Review  
Leadville, Colorado  
SCI # 15-083-00

Dear Stephanie:

At your request and on behalf of the Lake County School District R-1 (LCSD), we provided a visual observation of the existing West Park Elementary School (WPES) and an independent structural evaluation of the roof framing for the school facility. The purpose of our site visit and evaluation was to provide a peer review of the roof structure assessment for the school prepared by Lindauer-Dunn, Inc. dated August 1, 2014. In particular, we were asked to comment on the roof snow load capacity of the current in-place roof framing.

Our site observation of the WPES on September 23, 2015 was visual only and non-destructive. No finishes were removed to observe the structural systems. At the time of our visit the building was occupied by students and staff. We were accompanied during our observation by Mr. Todd Coffin, the Operations and Maintenance Director for the School District. We observed the exterior and interior of the school facility.

To conduct our independent evaluation and peer review of the roof structure, we were provided a copy of the report prepared by Lindauer-Dunn, Inc., which included structural calculations and diagrams. We were also provided limited information including or consisting of the original structural roof framing drawings for the school and a copy of various architectural drawings which included building elevations and building sections. This report/peer review contains a general building discussion followed by our comments regarding our site observation, independent evaluation, and our review of the previous report by Lindauer-Dunn of 2014.

**Existing Building Discussion:**

The existing WPES is a single story above grade structure with varying roof heights between the Administration/Entry areas, Gymnasium, and Classroom wings. The building was originally designed by Wheeler and Lewis Architects and was constructed in 1962 to 1963. The original drawings are dated May 11, 1962. We do not know what Building Code or design criteria were enforced at the time of design and construction, if any, in Leadville, Colorado.

The roof structure is primarily framed with 2x10 dimensional lumber joists which span to steel wide flange beams. The roof joists are spaced at 10" to 16" on-center depending on the span conditions. The steel beams span to steel wide flange columns that transfer roof loads to the foundation system. The roof deck at the wood framed areas is assumed to be plywood decking. The

Jeremy L. Crandall, P.E.

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perimeter structural columns on the long axis of the building are primarily on the exterior of the building envelope and exposed to the seasonal elements. The foundation system is unknown, but assumed to be continuous spread footings at perimeter walls and pad footings at column locations. The exterior wall system is a combination of multi-wythe brick masonry and window wall systems. The lateral load resisting system for wind and seismic forces appears to be the interior and exterior masonry walls placed tight to the face of the building columns, acting as shear walls.

The exposed roof structure in the Gym and Multi-Purpose rooms is comprised of steel beam framing and steel channel cross purlins, that are supported by steel columns located in the plane of the multi-wythe masonry walls. The steel beams in these areas are decked with 3" Tectum panels and bulb-tees.

Based on our visual observation of framing systems, and the exterior and interior walls, the building appears to be performing adequately at this time and no areas of structural distress were noted. The hard ceilings in the classroom wings and administration area that are attached directly to the underside of the roof structure did not show signs of creep (long term deflection due to loading). The exposed steel framing and Tectum decking in the Gym and Multi-Purpose area appeared to be performing adequately. The exterior and interior brick walls did not display any cracking beyond expected normal minor cracks, which is an indication the foundation system is performing adequately for the current usage of the building. We did note that the exposed exterior steel column bases were showing signs of rusting and recommend that the rust be brushed off and the column bases and base plates be primed with a rust inhibiting primer and painted as part of the building maintenance.

#### **Independent Roof Framing Review and Peer Review:**

Our independent structural review included an analysis of the existing roof framing of the east classroom wings and a review of the structural calculations included with the Lindauer-Dunn, Inc. roof framing report. For our independent analysis, we used the design standards available at the time the original building was engineered, which included the 1960 edition of the American Institute Manual of Steel Construction (AISC) and the 1957 Edition of Modern Timber Engineering that were as close as we could find to standards most likely used during the original design of the framing systems. At the time the Lindauer-Dunn, Inc report. was prepared, the provisions in Chapter 34 of the 2006 IBC for existing buildings, as adopted by the Division for Fire Prevention and Control (DFPC), would have been in effect. The DFPC is the jurisdiction having authority of state school facilities. The DFPC has recently adopted the 2015 IBC as the governing code which includes by reference the 2015 IEBC for existing buildings.

Based on recent projects we have completed in Park County, we understand that the current design roof snow load for new or altered structures is 90 psf based on the elevation of the WPES in the Leadville area. Increased snow drift loading would need to be considered at roof elevation changes and parapets exceeding the predicted snow depth of the base snow load.

Using the estimated material strengths for the wood roof joists, steel roof joists, and steel columns, and using a structure dead load of 20 psf, our independent calculations indicate that the maximum allowable uniform snow live load capacity is 45 psf for the wood roof joists, and 78 psf for the supporting steel beams. Using the 78 psf uniform roof snow live load, the interior steel columns of the classroom wings located along each side of the corridor are loaded to approximately 95% of

their allowable capacity. Our analysis of the classroom wing roof structures therefore concludes that the capacity of the wood roof joists would control, and the in-place uniform roof snow live load capacity would be limited to 45 psf. We would expect to come to a similar conclusion in the other wood framed areas of the school facility. Potential snow drift loading on low roofs adjacent to the Gym and Multi-Purpose areas would greatly exceed the 45 psf loading. Based on our review of the original drawings. The framing did not differ from the typical framing on the low roofs around these areas. Potential snow drift loading did not appear to have been considered by the original designers.

Based on our conclusions regarding the roof framing, we assume that the foundations for the supporting roof columns would also have been originally designed for a similar 45 psf roof live load plus an applicable dead load, but as previously mentioned, the original foundation drawings were not available to review.

After completing our independent evaluation of the WPES roof structure, we reviewed the calculations for the roof structure provided by Lindauer-Dunn, Inc. The provided structural calculations contained similar results to SCI's evaluation regarding the capacity of the existing roof structure of WPES. SCI agrees with the approach Lindauer-Dunn took in their evaluation and in general we concur with their conclusions.

**Conclusion:**

Based on our previously discussed visual observation of the WPES building, we did not observe any areas of the facility that appeared structurally unsound. Based on our independent calculations and peer review of the Lindauer-Dunn report, the allowable roof snow live load should be understood to be approximately 45 psf. The building has been in service as a school facility for approximately 52 years and appears to have been well maintained by the LCSD during this time. The current code recognized minimum roof snow live load of 90 psf for new buildings and additions in the general area of WPES, would result in an over-stressed condition to the building's structural systems.

Please contact us with any questions.

Sincerely,

STRUCTURAL CONSULTANTS, INC.

  
Frank E. Bumgarner, P.E.  
Managing Principal / Vice President

FEB/cab

