



# Focus Group

Facility Study & Master Planning Services  
Markesan District Schools

September 20, 2023

**BRAY**ARCHITECTS

**C.D. SMITH**  
CONSTRUCTION



# preliminary timeline

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**C.D. SMITH**  
CONSTRUCTION

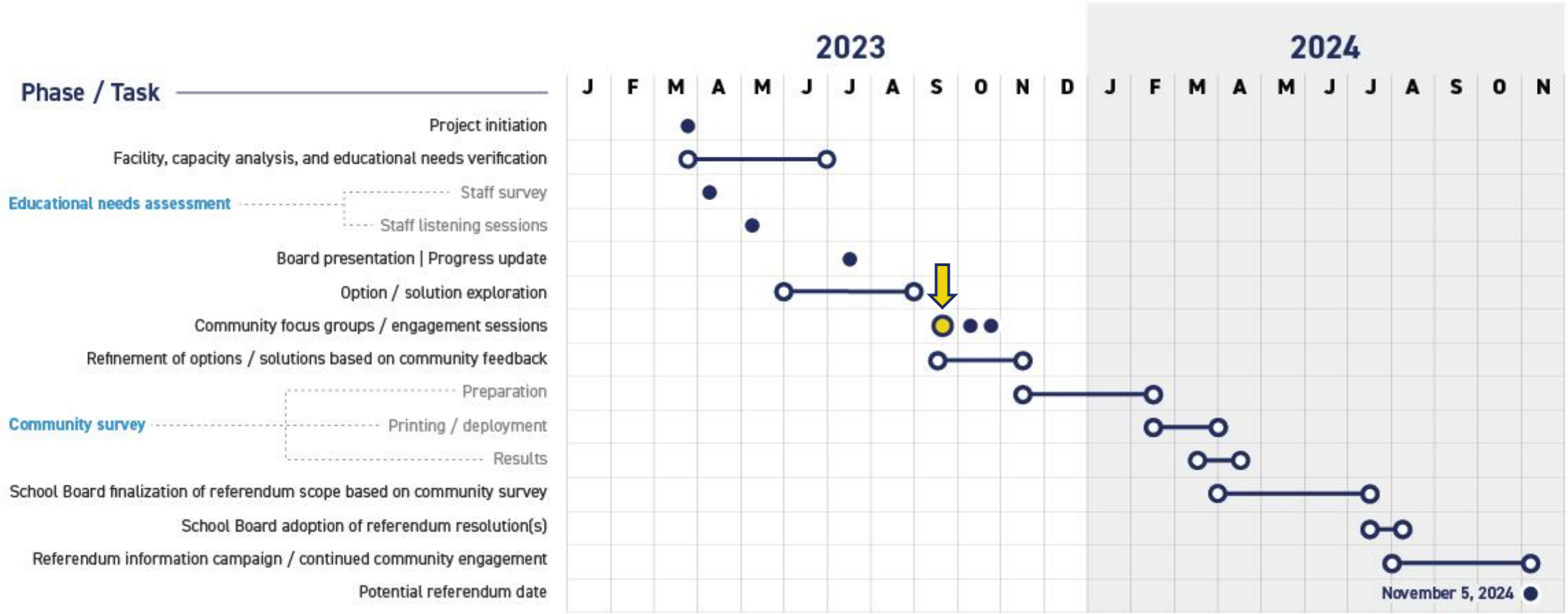




# Markesan District Schools | Preliminary Timeline

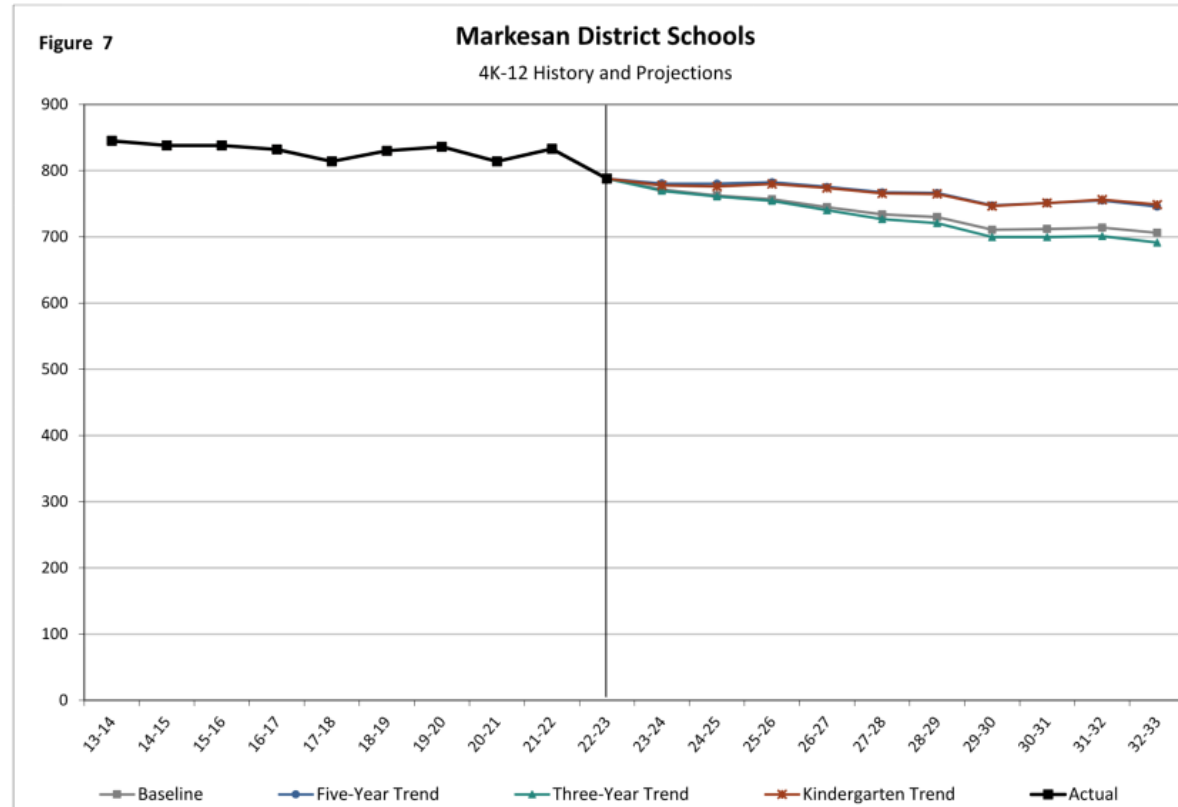
Hypothetical November 2024 Referendum

Please join us at 6:30pm for future Community Focus Group meetings:  
 October 4 – Markesan Elementary School  
 October 24 – Markesan Middle / High School



# markesan district schools enrollment history / projection

Summary page from UW-Applied  
Population Lab January 2023  
Markesan School District Study



**TABLE 12**  
**Summary of 4K-12 Projections**  
**Markesan District Schools**

	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33
Baseline	771	763	757	745	734	730	711	712	714	706
Five-Year Trend	781	780	782	775	767	766	748	751	755	746
Three-Year Trend	770	761	754	740	727	721	700	700	701	691
Kindergarten Trend	778	776	780	774	766	765	747	751	756	749

# facility study

**BRAY**ARCHITECTS

**C.D. SMITH**  
CONSTRUCTION



# Markesan District Schools

District-wide Facilities Study



# STUDY DOCUMENT

July 2023

**BRAY**ARCHITECTS



## assessment: process

Observations are given an assessment of "Good / Fair / Poor" that is based on both generalized and numerical criteria and can be established at the individual, categorical, building and District-wide level. This assessment assists in providing a high-level identification of the overall condition of each element, as well as identifying which elements have the most need. While such assessment does not include prioritization of identified needs, it may be used by the District as a tool for making such decisions once needs are identified.

Below is the defined criteria for each level of assessment:

- **GOOD** | No visible damage, wear or need for repair; no replacement required.
- **FAIR** | Some visible damage, wear or need for repair; no immediate replacement required.
- **POOR** | Substantial visible damage, wear or need for repair, or identified as containing potential asbestos; most pressing replacement needed.

It is important to note that any and all observations are not a direct reflection of the maintenance teams or their work. Even with proper maintenance, it is inevitable that buildings and their associated systems will wear with time and use.

# scorecard breakdown

## 1.00 Building Systems Summary 83%

Plumbing, Mechanical, Electrical, Life Safety



## 2.00 Interior Analysis 74%

Building Interior (walls, doors, openings, misc.), Ceiling, Flooring



## 3.00 Exterior Analysis 77%

Building Exterior + Envelope, Doors, Windows, Roof Identification



## 4.00 Site Assessment 62%



## 5.00 ADA Condition + Assessment 68%

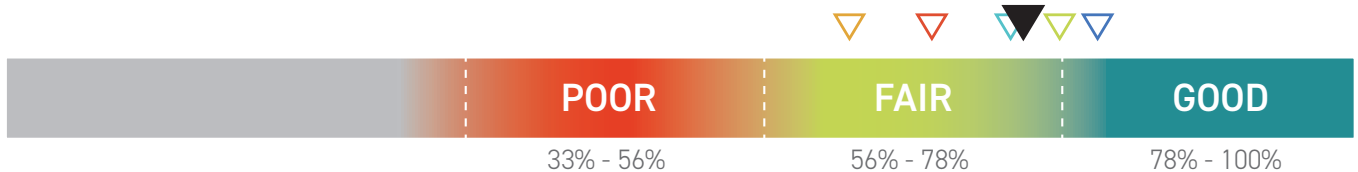


### Assessment Weight

- Building Systems Summary
- Interior Analysis
- Exterior Analysis
- Site Assessment
- ADA Condition + Assessment

## Overall Building

75.0%







## EXECUTIVE SUMMARY

# markesan district schools

**Acres Owned:** 142.08 Acres  
**Grades Served:** EC-12th Grades  
**Total Buildings Assessed:** 2/2  
**Average Classroom Size:** 940 sf

### District Architectural Condition Overview



### District ADA Condition Overview



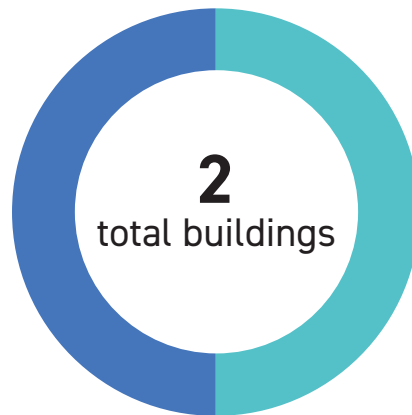
### District Building Systems Overview



### District Site Condition Overview



● 1 Elementary    ● 1 Middle/High School



- 0 buildings are in overall good condition
- 2 buildings are in overall fair condition
- 0 buildings are in overall poor condition

# markesan elementary scorecard breakdown

## ▼ 1.00 Building Systems Summary 75%

*Plumbing, Mechanical, Electrical, Life Safety*



## ▼ 2.00 Interior Analysis 66%

*Building Interior (walls, doors, openings, misc.), Ceiling, Flooring*



## ▼ 3.00 Exterior Analysis 61%

*Building Exterior + Envelope, Doors, Windows, Roof Identification*



## ▼ 4.00 Site Assessment 50%



## ▼ 5.00 ADA Condition + Assessment 60%

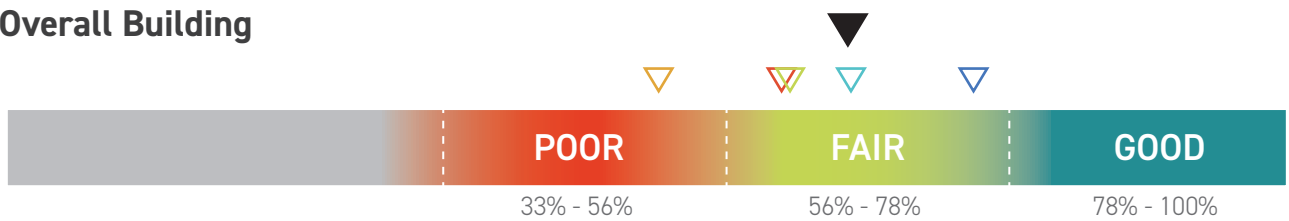


### Assessment Weight

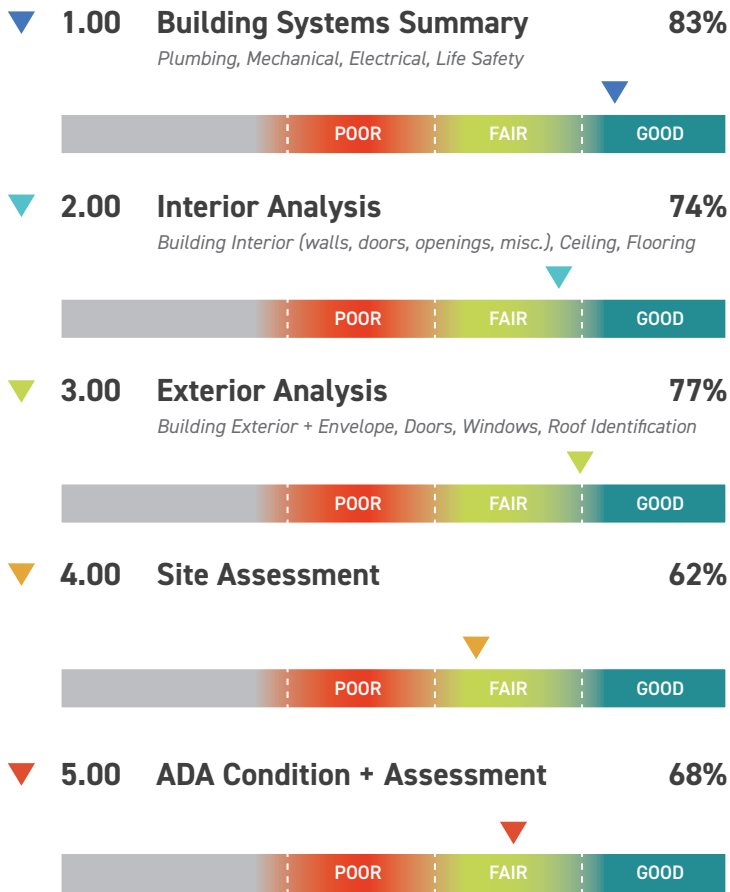
- Building Systems Summary
- Interior Analysis
- Exterior Analysis
- Site Assessment
- ADA Condition + Assessment

## Overall Building

65%



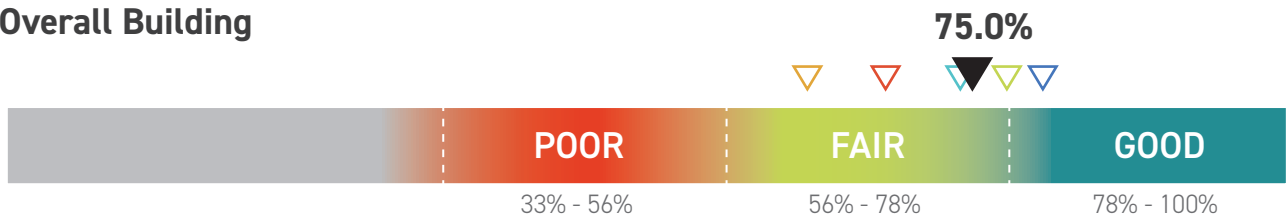
# markesan middle/high school scorecard breakdown



### Assessment Weight

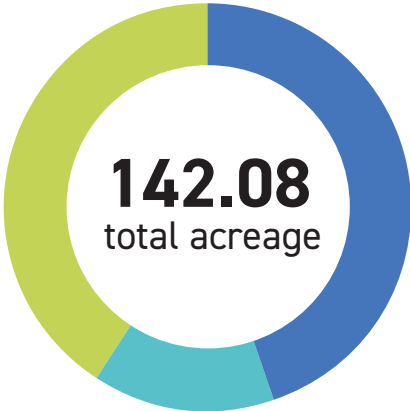
- Building Systems Summary
- Interior Analysis
- Exterior Analysis
- Site Assessment
- ADA Condition + Assessment

## Overall Building



# district-owned property + boundaries map

● Elementary    ● Middle/High School    ● School Forest



## elementary

- 1 Markesan Elementary (63.56)

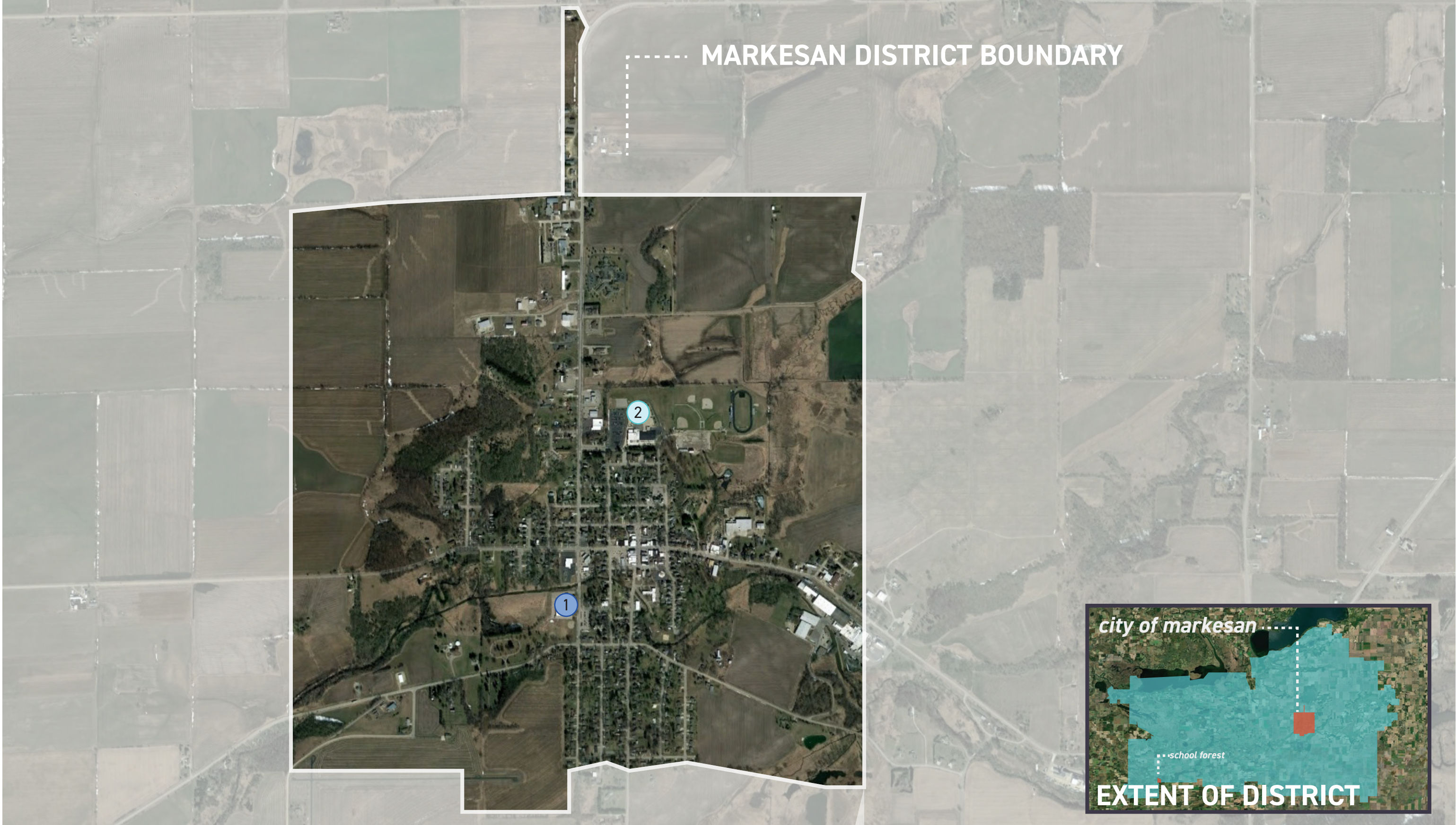
## middle/high school

- 2 Markesan Middle/High School (20.52)

## other district owned property

- 3 School Forest (58.00)

district-owned property + boundaries map



# 01

## markesan elementary school

### Scorecard Rating



65.0%



### Architectural Condition



### ADA Condition



### Building Systems



### Site Condition



### SUMMARY

Markesan Elementary School provides a comprehensive program for Early Childhood - 5th grade students.

**Grades Served:** EC - 5th Grades

**Site Size:** 63.56 acres

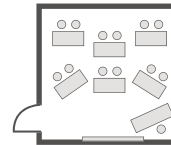
**Parking:** 77 stalls

### Original Date of Construction

1936

*As of 2023: 87 years old*

### Average Core Classroom Size Comparison



874 sq. ft.

### Recommended Size

1<sup>st</sup> - 12<sup>th</sup>: 900 sq. ft.  
Kindergarten: 1200 sq. ft.

### Square Footage

83,160  
Sq. Ft.



# markesan elementary school

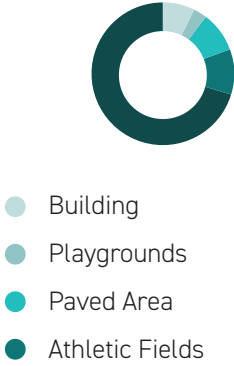


\*School Location in Markesan School District Boundary

## KEY TAKEAWAYS

- A Freshwater Emergent Wetland is located on the West and Northwest portion of the site.
- There is no parking directly connected to the school, however, there are two offsite parking lots to the east that serve the school's parking needs.
- The athletic fields contain two baseball diamonds and mulched playground areas with playground equipment are present.

## PARCEL DIVISION



## BUSES ON SITE



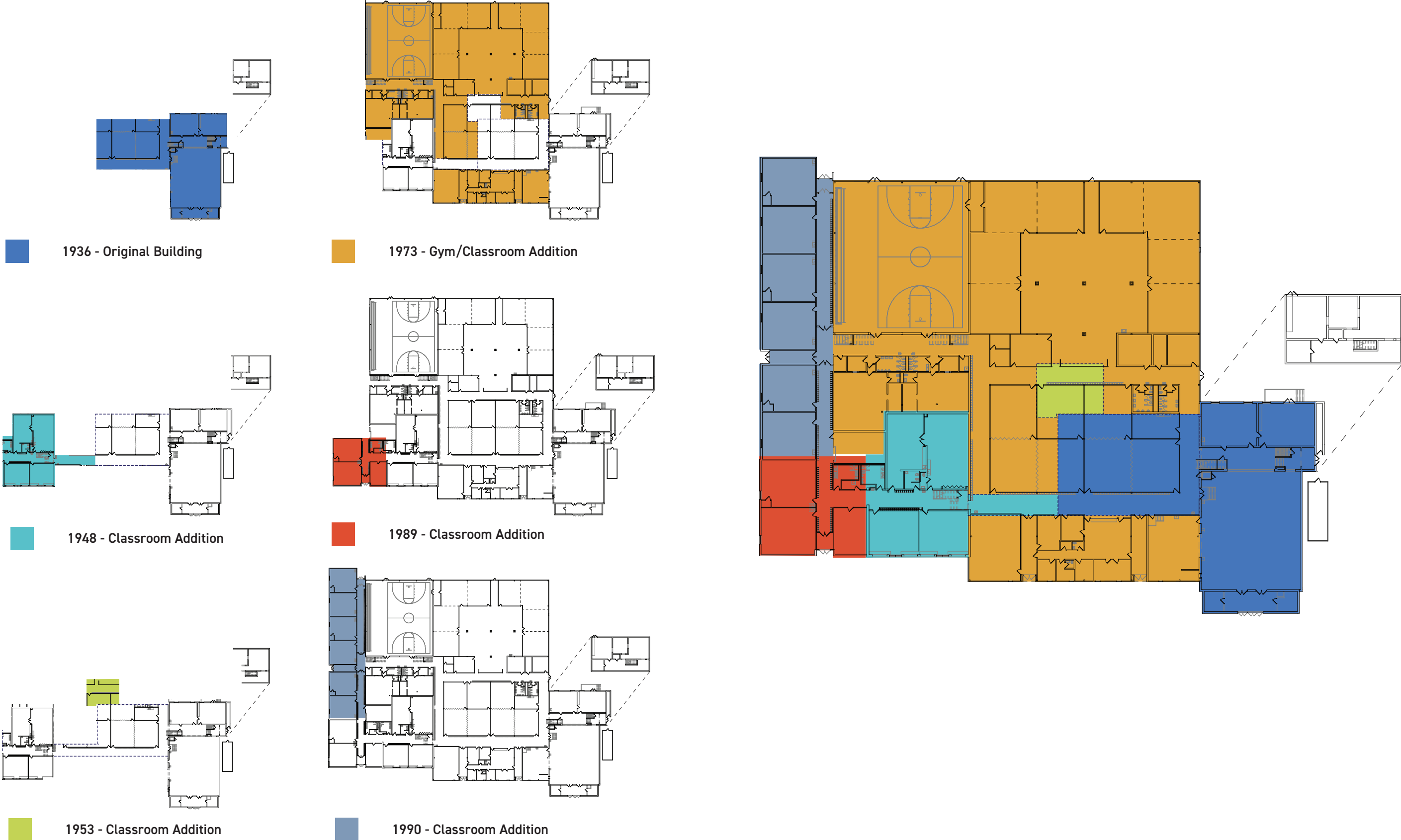
Current Capacity: 3 Buses  
2 Vans

markesan elementary school site map

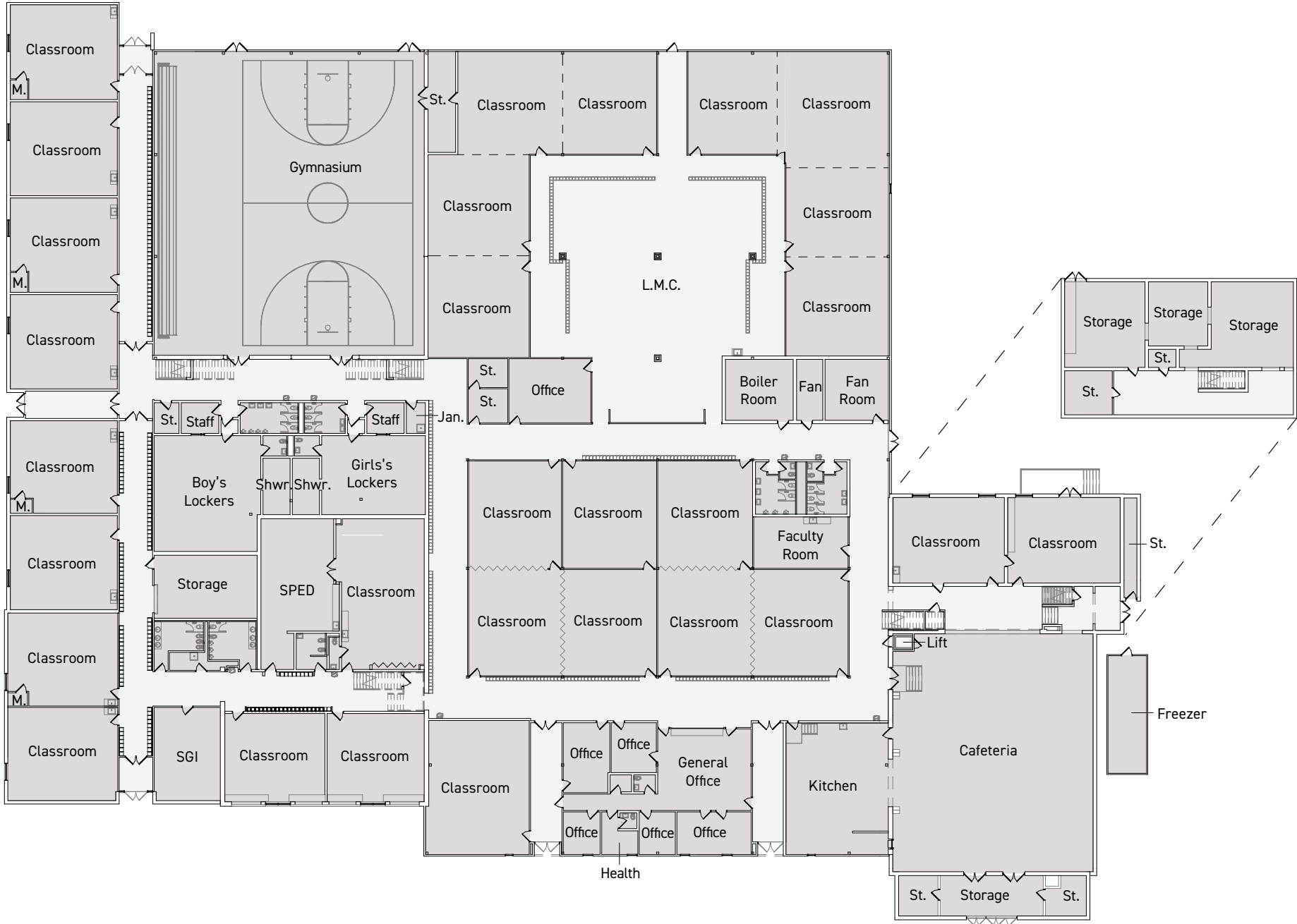




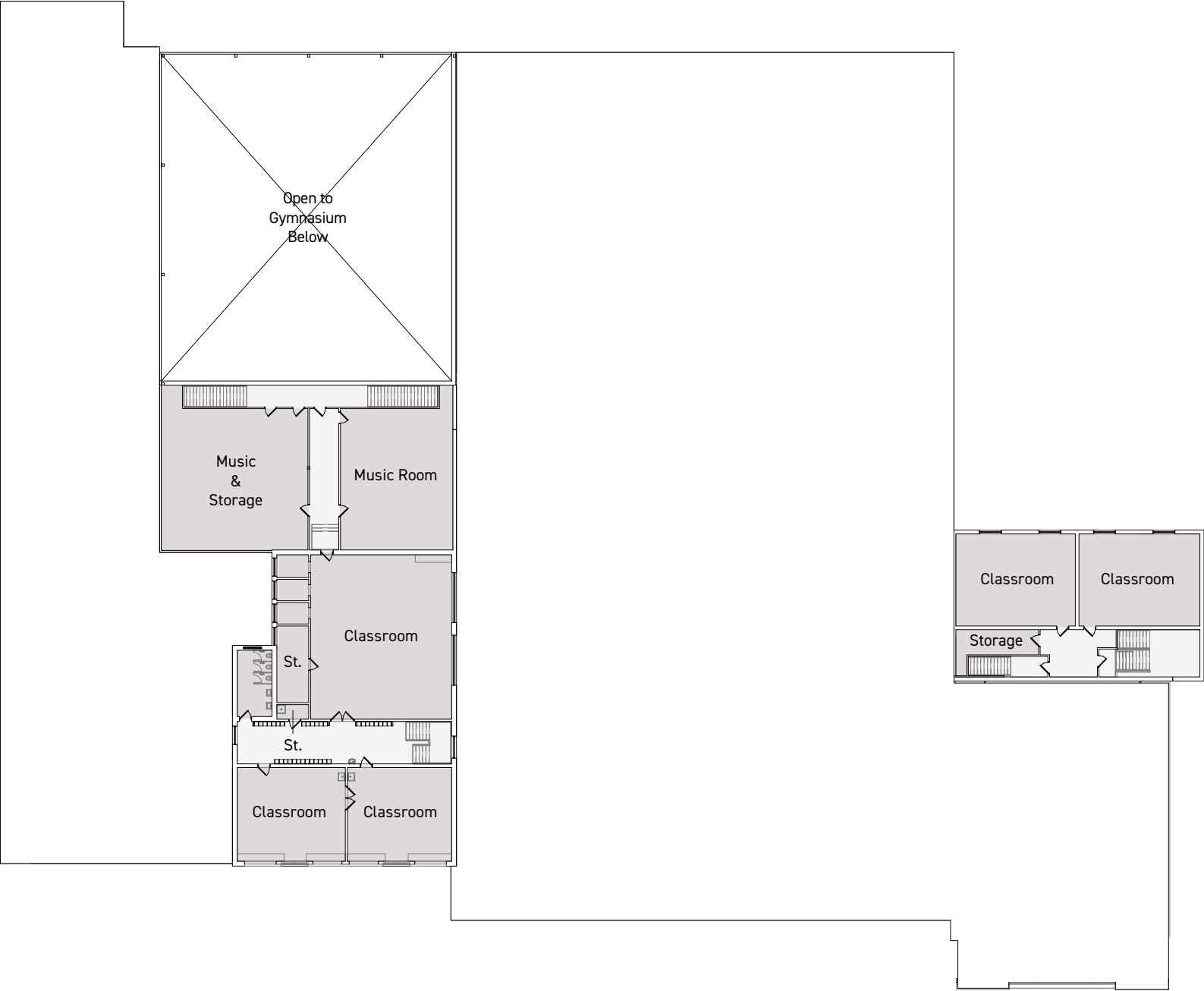
markesan elementary school building evolution



markesan elementary school floor plan | first floor



markesan elementary school floor plan | second floor



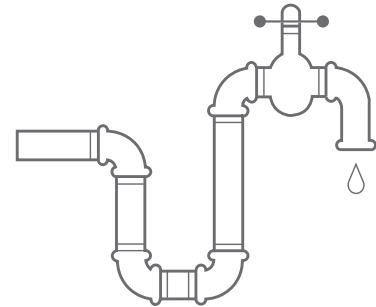
# markesan elementary school building systems summary

- **Good Condition**  
 No visible damage, wear or need for repair; no replacement needed.
- **Fair Condition**  
 Some visible damage, wear or need for repair; no immediate replacement required.
- **Poor Condition**  
 Substantial visible damage, wear or need for repair, or identified as containing potential asbestos; most pressing replacement needed.

## Plumbing Condition Overview



Replace all piping with new copper piping



## PLUMBING

<b>Domestic Water System</b>	■	
Water Service	●	4" water service w/ 3" water meter.
Water Distribution Piping	●	Copper piping. The original piping appears to be in fair condition, but is reaching the end of its life expectancy.
Water Softening System	●	Hot water only.
Backflow Preventer	○	
Irrigation System	○	
Pressure	●	Adequate
Fire Sprinkler System	○	
<b>Sanitary System</b>	■	
Sanitary Sewer	○	No issues with the system were reported.
Sanitary Drain, Waste + Vent Piping	○	No issues with the system were reported.
Acid Waste Piping + Basin	○	
Interceptors	●	No issues with the system were reported.
<b>Storm System</b>	□	
Storm Sewer	○	
Storm Drain Piping	○	
Roof Drainage	○	
Sump Pump	○	
<b>Natural Gas System</b>	■	No issues with the system were reported.

\* See appendix for full engineer reports + additional information.

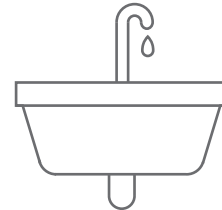
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## Plumbing Condition Overview



Consider replacing flush valves and faucets with sensor operation



## PLUMBING

### Plumbing Equipment



Water Heater	<span style="color: #90EE90;">●</span>	Multiple water heaters - no issues were reported.
Water Softener	<span style="color: #90EE90;">●</span>	Hot water only.
Circulator Pump	<span style="color: #90EE90;">●</span>	Multiple pumps @ 5-15 gpm.
Grease Interceptor	<span style="color: #90EE90;">●</span>	No issues with the system were reported.

### Plumbing Fixtures



Water Closets	<span style="color: #90EE90;">●</span>	Floor mounted water closets with manual flush valves.
Urinals	<span style="color: #90EE90;">●</span>	Wall mount with manual lever flush valve.
Lavatories	<span style="color: #90EE90;">●</span>	Wall mount with a mixture of sensor battery and manual faucets.
Electric Water Coolers	<span style="color: #90EE90;">●</span>	Single use with and without bottle filling stations.
General Sinks	<span style="color: #90EE90;">●</span>	Stainless steel drop-in basins with manual lever faucets.

\* See appendix for full engineer reports + additional information.

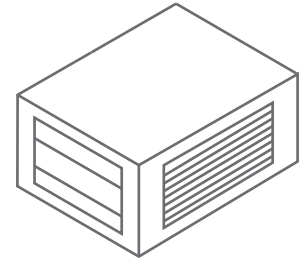
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## Mechanical Condition Overview



Plan to replace 1973 air handling unit and booster coils



## MECHANICAL

### Heating



Boiler Plant



The boilers were installed between 2010 – 2013 and appear to be in satisfactory condition. The boilers have an estimated 20-year life expectancy.

Pumps



The exact age of the pumps is not known, but they appear to be about 25 years old and are in satisfactory condition. The pumps have an estimated 25-year life expectancy.

### Ventilation + A/C Systems



Air Handling Units



The main air handling unit was installed in 1973 and is in marginal condition. The air handling unit has an estimated 30-year life expectancy.

Air Conditioning Systems



The air-cooled condensing unit serving the main air handling unit and the unit serving the office blower coil unit were both replaced in 2021 and are in excellent condition. The condensing units serving the furnaces in the 1990 addition were replaced in 2009 and appear to be in good condition. The larger condensing unit serving the main AHU has an estimated 25-year life expectancy while the smaller units serving the office and the 1990 addition have an estimated 15-year life expectancy.

Blow/Fan Coil Units



The blower coil unit serving the office area was replaced in 2021 and is in excellent condition. The residential-grade furnaces serving the 1990 addition are replacement units from 2009 and 2022 and are all in good condition. However, these units seem to fail at different rates. The blower coils and furnaces have an estimated 15-year life expectancy.

### Control Systems



The building is served by a Johnson Controls Metasys System installed in 2021.

\* See appendix for full engineer reports + additional information.

# markesan elementary school building systems summary

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## Electrical Condition Overview



## Replace Service Switchboard



## ELECTRICAL

<b>Electrical Service</b>	<span style="color: #FF0000;">■</span>	Consider adding a surge protective device at each service location to provide protection from incoming surges such as lightning.
Utility Service	<span style="color: #008080;">●</span>	It appears that the service size is adequate for the facility.
Switchboard	<span style="color: #FF0000;">●</span>	Based on the service equipment's age and condition, we recommend the replacement of the service switchboard with new. This will ensure reliability of equipment and breakers will trip upon fault.
<b>Panelboards</b>	<span style="color: #FF0000;">■</span>	<ul style="list-style-type: none"> <li>A. The old Square D and Kinney type panelboards and loadcenters are very old, have reached the end of their useful life and should be replaced based on their age and condition.</li> <li>B. The newer Square D NQOD type panelboards are in good working condition, in general have room for additional breakers and can remain. Add to the existing panelboards as necessary.</li> <li>C. Complete an Arc Flash Study of the existing electrical system and add arc flash labels to all electrical panelboards. This will increase the safety of personnel maintaining or operating equipment along with occupants in the vicinity of the equipment.</li> <li>D. Provide type-written directories and engraved panelboard labeling for all electrical panelboards throughout the building to prevent loss of information.</li> </ul>
<b>Light Fixtures + Controls</b>	<span style="color: #008080;">■</span>	Light fixtures throughout the building have recently been upgraded and can remain. Replace fixtures throughout the building as necessary.
Interior Lighting	<span style="color: #008080;">●</span>	
Corridor Lighting	<span style="color: #008080;">●</span>	
Exit Lights	<span style="color: #008080;">●</span>	
Exterior Lights	<span style="color: #008080;">●</span>	

\* See appendix for full engineer reports + additional information.

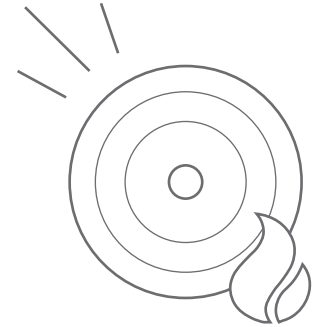
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 Substantial visible damage, wear or need for repair, or identified as containing potential asbestos; most pressing replacement needed.

## Life Safety Condition Overview



## Replace Access Control System



## LIFE SAFETY

### Emergency Generator



- A. Due to the age and condition of the emergency generator, we recommend providing a new exterior rated natural gas generator. We recommend the generator to be sized to feed life-safety loads such as emergency egress lighting and fire alarm, as well as non-life-safety loads such as the main office complex, data closets, phone, intercom, boiler, boiler circulating pump and cooler/freezer.
- B. We also recommend providing (2) new transfer switches fed from the generator which would separate life-safety and non-life-safety loads throughout the building. To bring the facility up to code, the new transfer switches would be located in a separate room from the main electrical service and boilers.

### Emergency Egress Lighting



Add interior and exterior egress lighting to emergency generator or provide additional battery backup egress lighting to comply with current codes.

### Fire Alarm System



Although the fire alarm system is operational, it is more than 20 years old and has reached the end of its life expectancy. We recommend replacing the existing addressable system head end and all devices to a new, code approved voice addressable fire alarm system with all new voice annunciated devices throughout the entire facility.

### Public Address System



The existing Audio Enhancement Epic IP head end is in good working condition and can remain. Continue to add additional speakers to the existing intercom head end as necessary.

### Access Control System



A new access control system should be considered. We propose a new Mercury device installed above each existing exterior door with a new CAT6 cable routed back to the network switch and provide new software. The existing equipment at each door can remain or additional device detection can be added. This will allow all door hardware to be run off any software and not require the replacement of the devices at the existing doors. This will allow for numerous features including the ability to open a door from a remote device such as a cell phone.

### Security System



Add additional IP cameras to the existing system as required.

\* See appendix for full engineer reports + additional information.



# markesan elementary school interior analysis

## OVERALL CONDITION RATING & KEY TAKEAWAYS



- Majority of the aluminum doors with aluminum frames are in good condition. Some doors in fair condition due to staining and/or surface scratches.
- Majority of the wood doors with hollow metal frames are in good condition. Some doors in fair condition due to staining and/or surface scratches.
- Majority of the concrete block walls are in good condition. There are some areas in poor condition due to cracking, splitting, broken and/or missing blocks.
- There are several instances where the tile wall base is in poor condition due to chipping, cracking, and/or missing tiles.
- The railing at the stage of the cafeteria currently consists of vertical metal posts with rope barriers between, posing a potential safety/code issue.
- Some doors contain transfer grilles.

### WALLS

- 1 Concrete Block
- 2 Gypsum
- 3 Brick
- 4 Precast
- 5 Tile
- 6 Glazed Block
- 7 Wood Paneling
- 8 Plywood
- 9 Partition Walls
- 10 Vinyl Base
- 11 Tile Base
- 12 Glazed Block Base

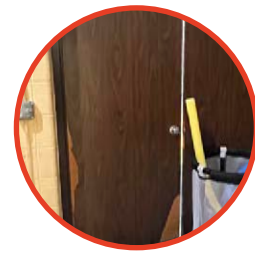
### DOORS / OPENINGS

- 13 Wood Door w/ Hollow Metal Frame
- 14 Aluminum Door w/ Aluminum Frame
- 15 Folding Door
- 16 Rolling Door
- 17 Hollow Metal Borrowed Lite
- 18 Solid Surface Sill
- 19 Marble Sill
- 20 Hollow Metal Door w/ Hollow Metal Frame
- 21 Wood Door w/ Aluminum Frame
- 22 Tile Sill

### MISCELLANEOUS

- 23 Laminate Casework
- 24 Wood Casework
- 25 Metal Toilet Partitions
- 26 Wood Railings
- 27 Metal Railings
- 28 Metal Lockers
- 29 Bleachers
- 30 Wood Cubbies

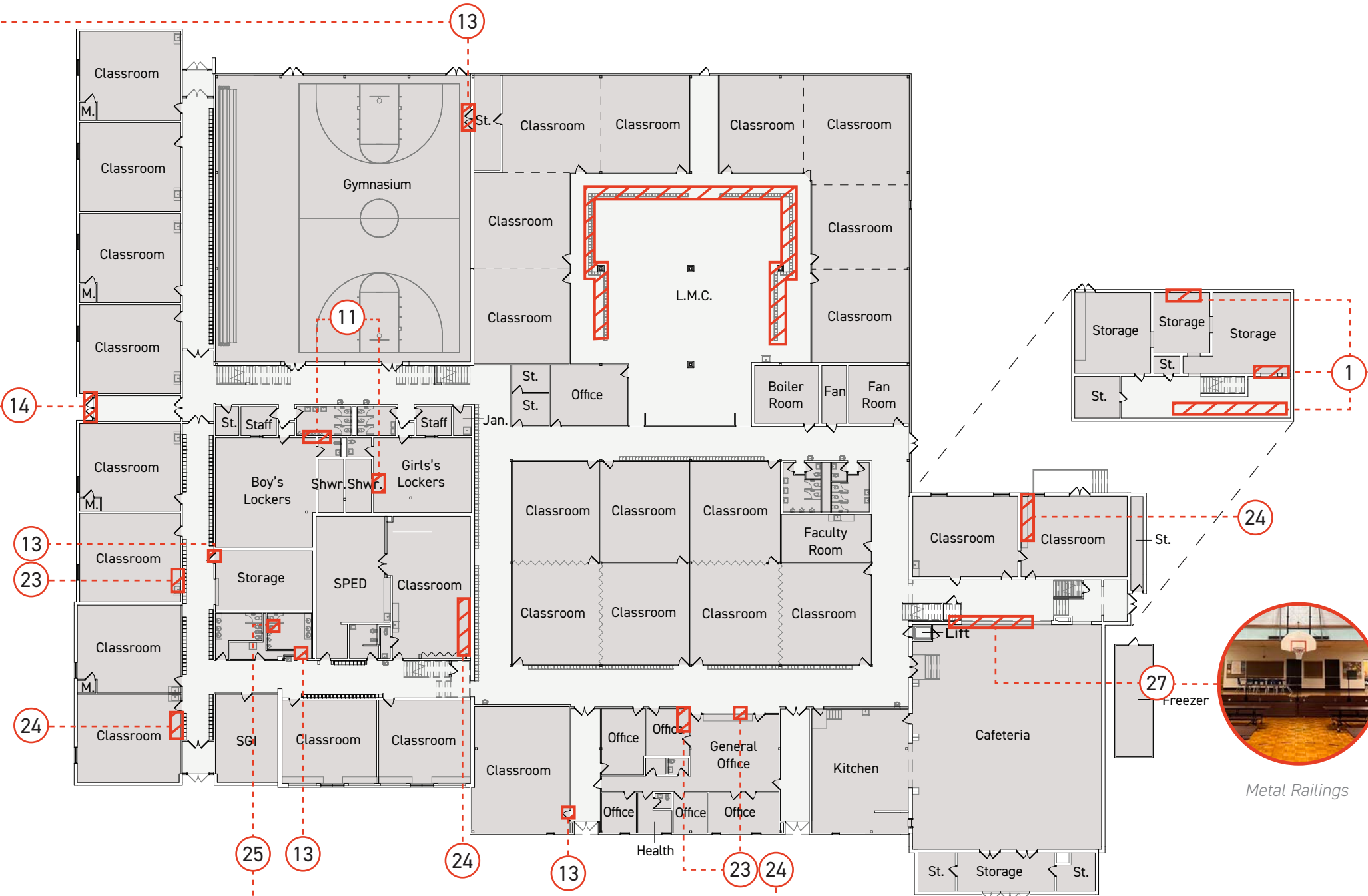
# markesan elementary school interior identifications + analysis | first floor



Wood Door w/  
Hollow Metal Frame



Aluminum Door w/  
Aluminum Frame



Concrete Block



Metal Railings



Metal Toilet Partitions

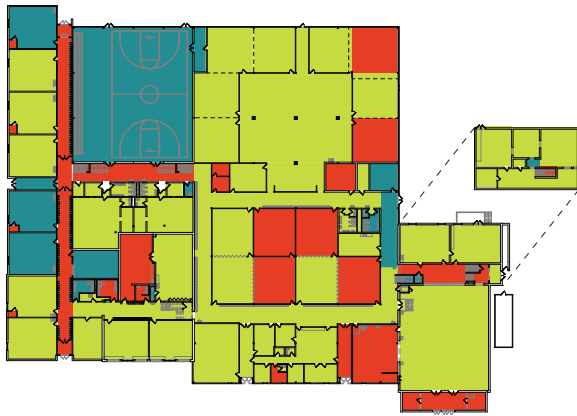


Laminate Casework

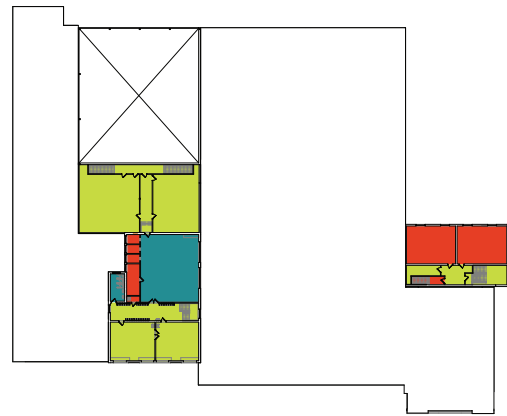
**\*Note:** The diagram above reflects instances of materials in poor condition, but does not reflect the material's overall condition.



# markesan elementary school ceiling analysis



First & Lower Floor

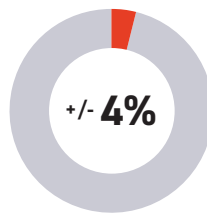


Second Floor

## KEY TAKEAWAYS

- Materials identified as potentially containing asbestos are considered to be in poor condition.
- Spline ceilings are identified as a potential asbestos containing material.
- There is spline located in the Special Education Classroom on the first floor.
- Majority of the acoustical panel ceilings are in fair condition due to staining and/or cracking. Some acoustical panel ceilings are in poor condition due to excessive staining.

## HIGHLIGHT



of ceilings were identified as potentially containing asbestos

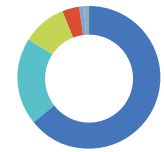
## OVERALL CEILING CONDITION



- |        |                            |
|--------|----------------------------|
| ● Good | No visible damage          |
| ● Fair | Some visible damage        |
| ● Poor | Substantial visible damage |

# markesan elementary school ceiling material identification | first floor

## Color Key



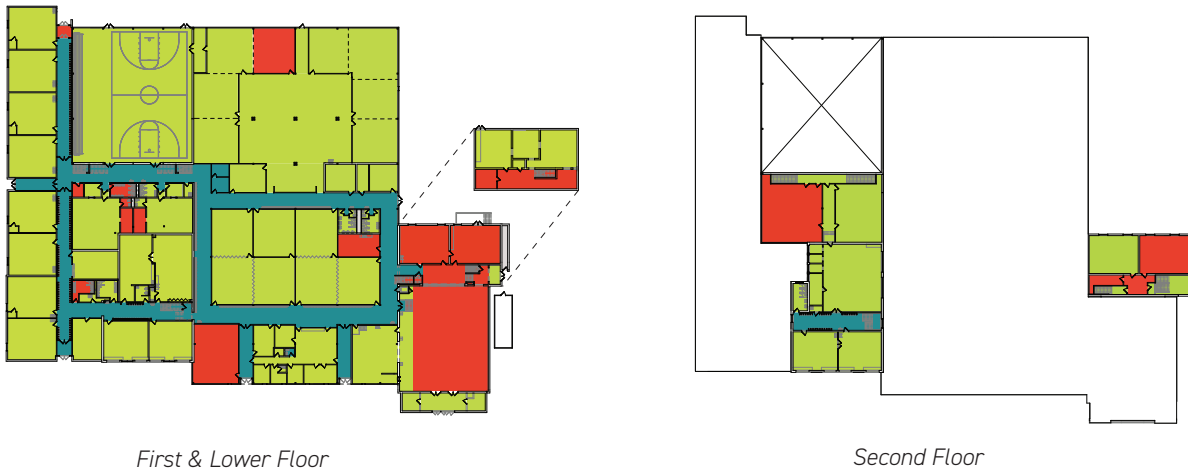
- Acoustical Panel
- Exposed Deck
- Exposed Insulation
- Spline
- Gypsum
- Plaster
- No Data

## Potential of Asbestos Containing Materials

Asbestos is a material that was used in the construction industry, most commonly between 1960 - 1990. **There was no asbestos testing performed for this assessment.** Observations and assumptions were made based on common older building materials that typically have been identified to containing asbestos.



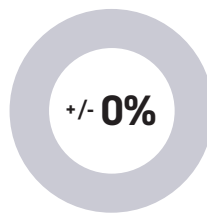
# markesan elementary school flooring analysis



## KEY TAKEAWAYS

- Materials identified as potentially containing asbestos are considered to be in poor condition.
- 9" x 9" vinyl tile flooring is identified as potential asbestos tile.
- There are some areas where the wood flooring is in poor condition due to cracking, chipping, and/or surface scratches.
- There are some areas where the concrete flooring is in poor condition due to cracking, chipping, and/or surface scratches.
- There are some areas where the floor tile is in poor condition due to surface cracking and/or splitting tiles.

## HIGHLIGHT



of floors were identified as potentially containing asbestos

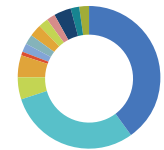
## OVERALL FLOORING CONDITION



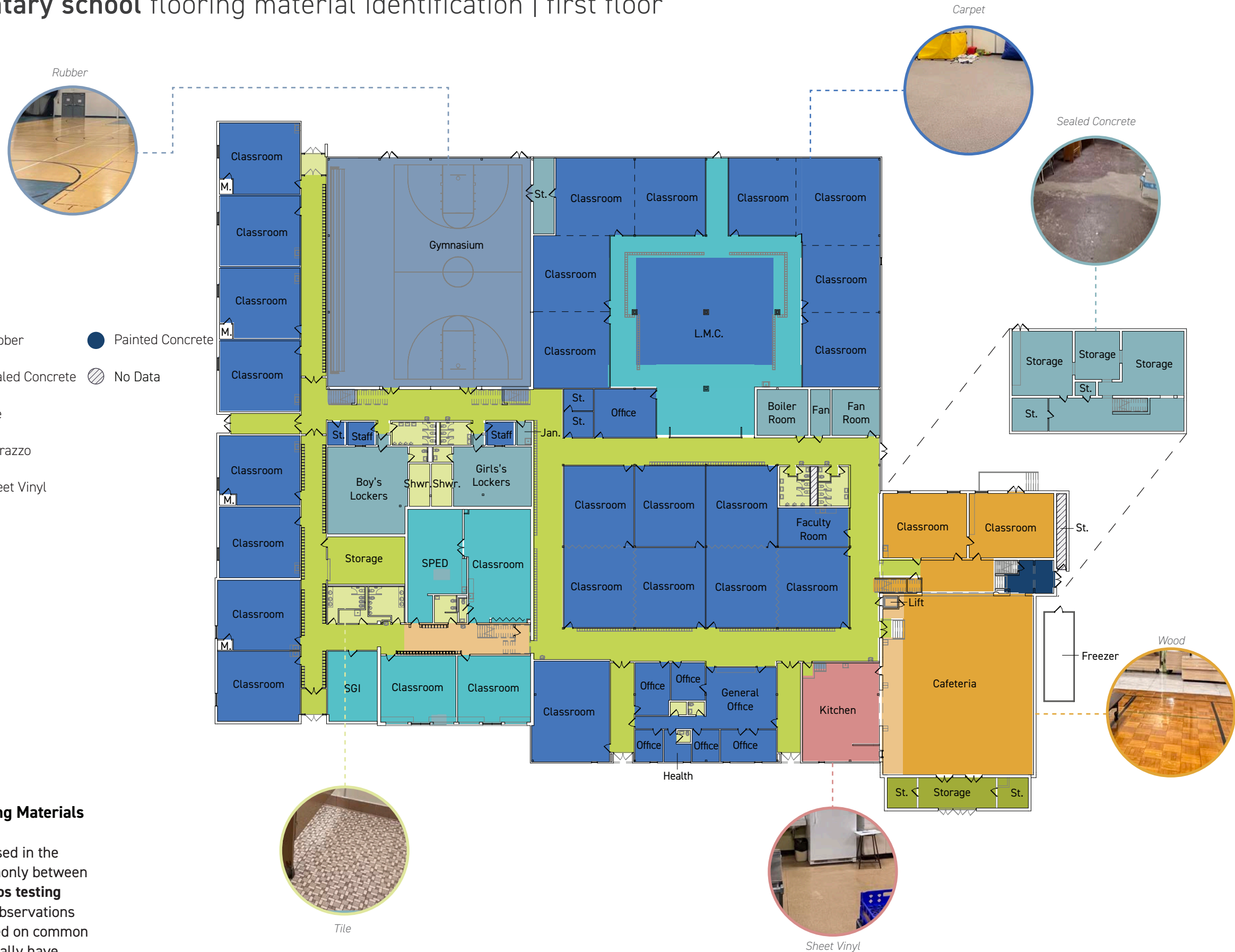
- Good | No visible damage
- Fair | Some visible damage
- Poor | Substantial visible damage

# markesan elementary school flooring material identification | first floor

## Color Key



- Carpet
- Vinyl Composite Tile
- Resinous
- Wood
- Potential Asbestos Tile
- Rubber
- Sealed Concrete
- Tile
- Terrazzo
- Painted Concrete
- No Data
- Sheet Vinyl



## Potential of Asbestos Containing Materials

Asbestos is a material that was used in the construction industry, most commonly between 1960 - 1990. **There was no asbestos testing performed for this assessment.** Observations and assumptions were made based on common older building materials that typically have been identified to containing asbestos.



# markesan elementary school exterior analysis

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## OVERALL CONDITION RATING & KEY TAKEAWAYS



- Majority of the precast is in fair condition with some areas in poor condition due to staining and/or cracking.
- Majority of the brick is in fair condition. Some areas in poor condition due to cracking and/or crumbling.
- Majority of the metal panel is in fair condition due to peeling paint.
- Majority of caulking at wall joints is in poor condition due to deterioration.
- Some instances where the wood siding is in poor condition due to surface weathering.
- Metal grates on windows are in poor condition due to rusting.

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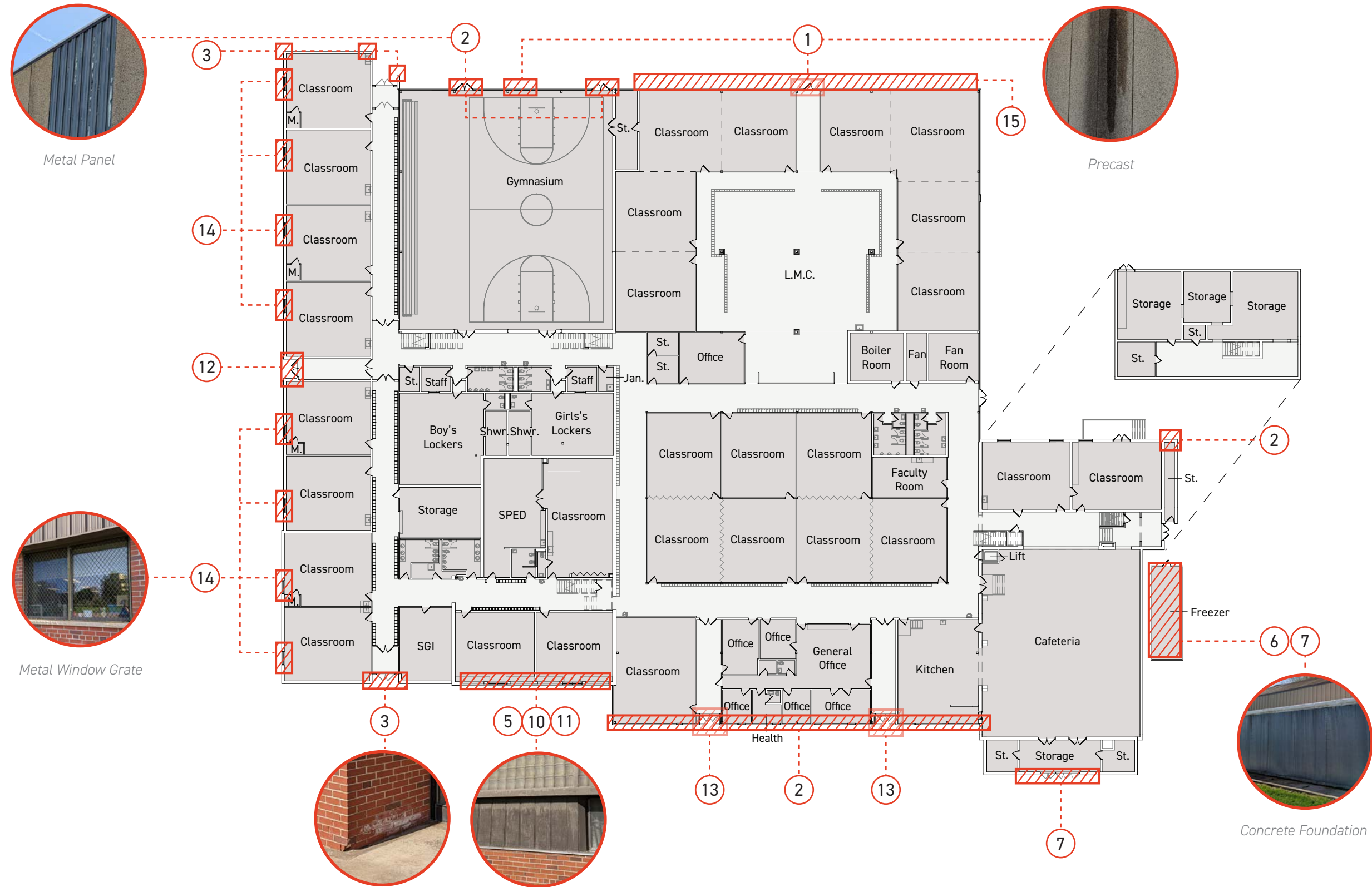
### WALLS

- 1 Precast
- 2 Metal Panel
- 3 Brick
- 4 Vinyl Siding
- 5 Wood Siding
- 6 Concrete Foundation

### MISCELLANEOUS

- 7 Metal Fascia
- 8 Metal Roof Edge
- 9 Stone Sill
- 10 Concrete Sill
- 11 Metal Sill
- 12 Metal Soffit
- 13 Plywood Soffit
- 14 Metal Window Grates
- 15 Metal Gutters

# markesan elementary school exterior identifications + analysis | first floor



**\*Note:** The diagram above reflects instances of materials in poor condition, but does not reflect the material's overall condition.



# markesan elementary school exterior door analysis

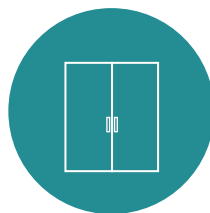
## No. Door Type / Door Frame

- 1 Aluminum / Aluminum
- 1.1 Hollow Metal / Hollow Metal
- 1.2 Hollow Metal / Hollow Metal
- 1.3 Wood / Wood
- 2 Aluminum / Aluminum
- 3 Aluminum / Aluminum
- 4 Aluminum / Aluminum
- 4.1 Aluminum / Aluminum
- 5 Aluminum / Aluminum
- 5.1 Hollow Metal / Hollow Metal
- 5.2 Hollow Metal / Hollow Metal
- 6 Aluminum / Aluminum

## KEY TAKEAWAYS

- Majority of the aluminum doors and frames are in good condition.
- Several instances where hollow metal doors are in poor condition due to rusting, weathering, surface scratches, paint peeling off and/or surface bubbling.
- Wood doors are in poor condition due to weathering, surface cracking, and paint peeling off.

## MOST COMMON EXTERIOR DOOR



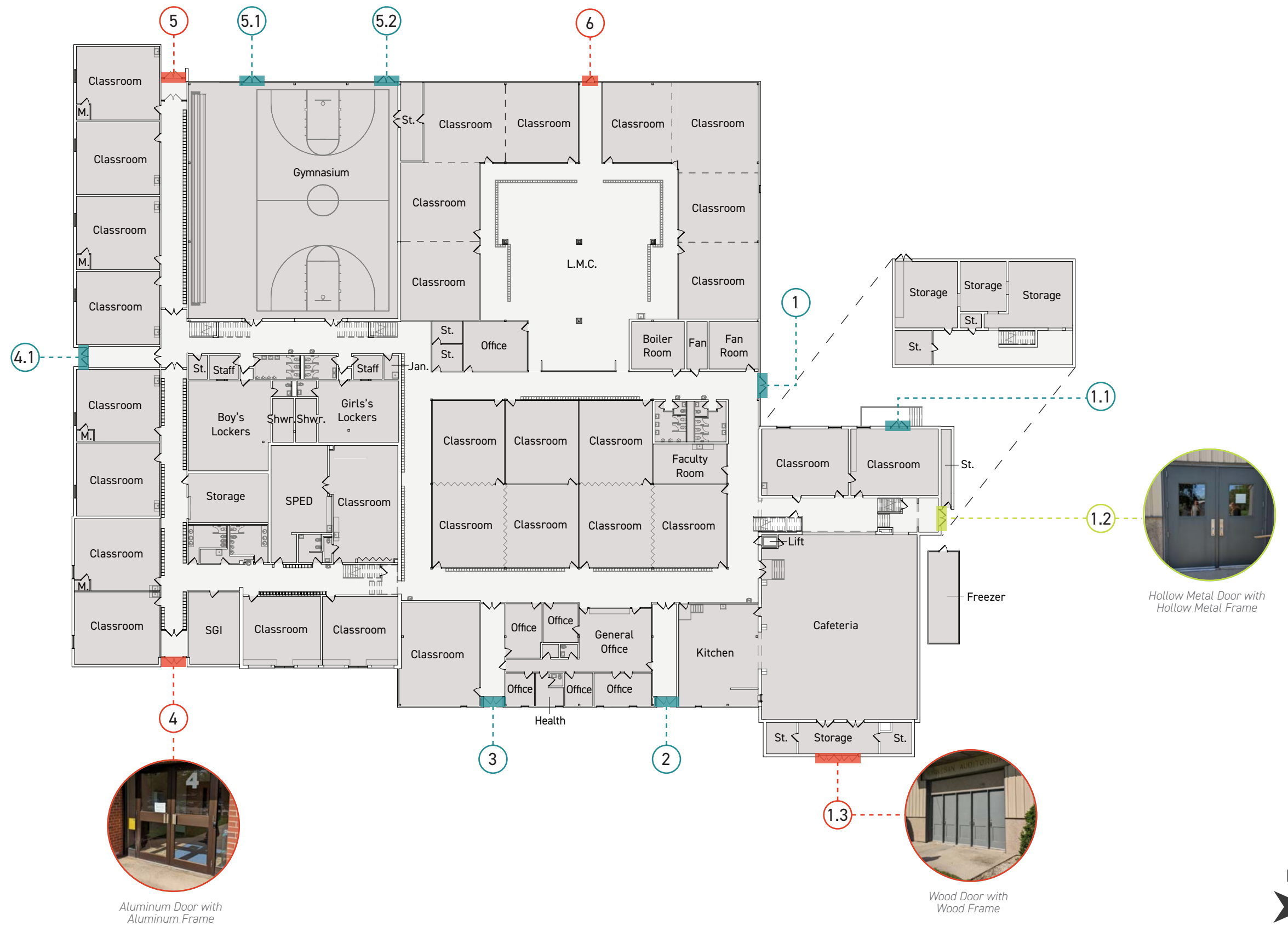
*Aluminum Door(s) w/  
Aluminum Frame*

## OVERALL EXTERIOR DOOR CONDITION



- Good | No visible damage
- Fair | Some visible damage
- Poor | Substantial visible damage

# markesan elementary school exterior door identification + analysis | first floor



Aluminum Door with Aluminum Frame



Hollow Metal Door with Hollow Metal Frame



Wood Door with Wood Frame

# markesan elementary school exterior window analysis

## No. Frame Type / Glass Type

1	Aluminum / Double Pane	14	Aluminum / Double Pane
2	Aluminum / Double Pane	15	Aluminum / Double Pane
3	Aluminum / Double Pane	16	Aluminum / Double Pane
4	Aluminum / Double Pane	17	Aluminum / Double Pane
5	Aluminum / Double Pane	18	Vinyl / Double Pane
6	Aluminum / Double Pane	19	Vinyl / Double Pane
7	Aluminum / Single Pane	20	Aluminum / Single Pane
8	Aluminum / Single Pane	21	Aluminum / Single Pane
8.1	Glass Block	21.1	Glass Block
9	Aluminum / Double Pane	22	Aluminum / Double Pane
10	Aluminum / Double Pane	23	Aluminum / Double Pane
11	Aluminum / Double Pane	24	Aluminum / Double Pane
12	Aluminum / Double Pane	25	Aluminum / Double Pane
13	Aluminum / Double Pane	26	Glass Block

## KEY TAKEAWAYS

- Majority of the aluminum framed windows with double pane glass are in good condition.
- Majority of the vinyl windows are in poor condition due to weathering.
- Window #2 is in poor condition due to a crack in the glass.

## MOST COMMON EXTERIOR WINDOW



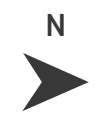
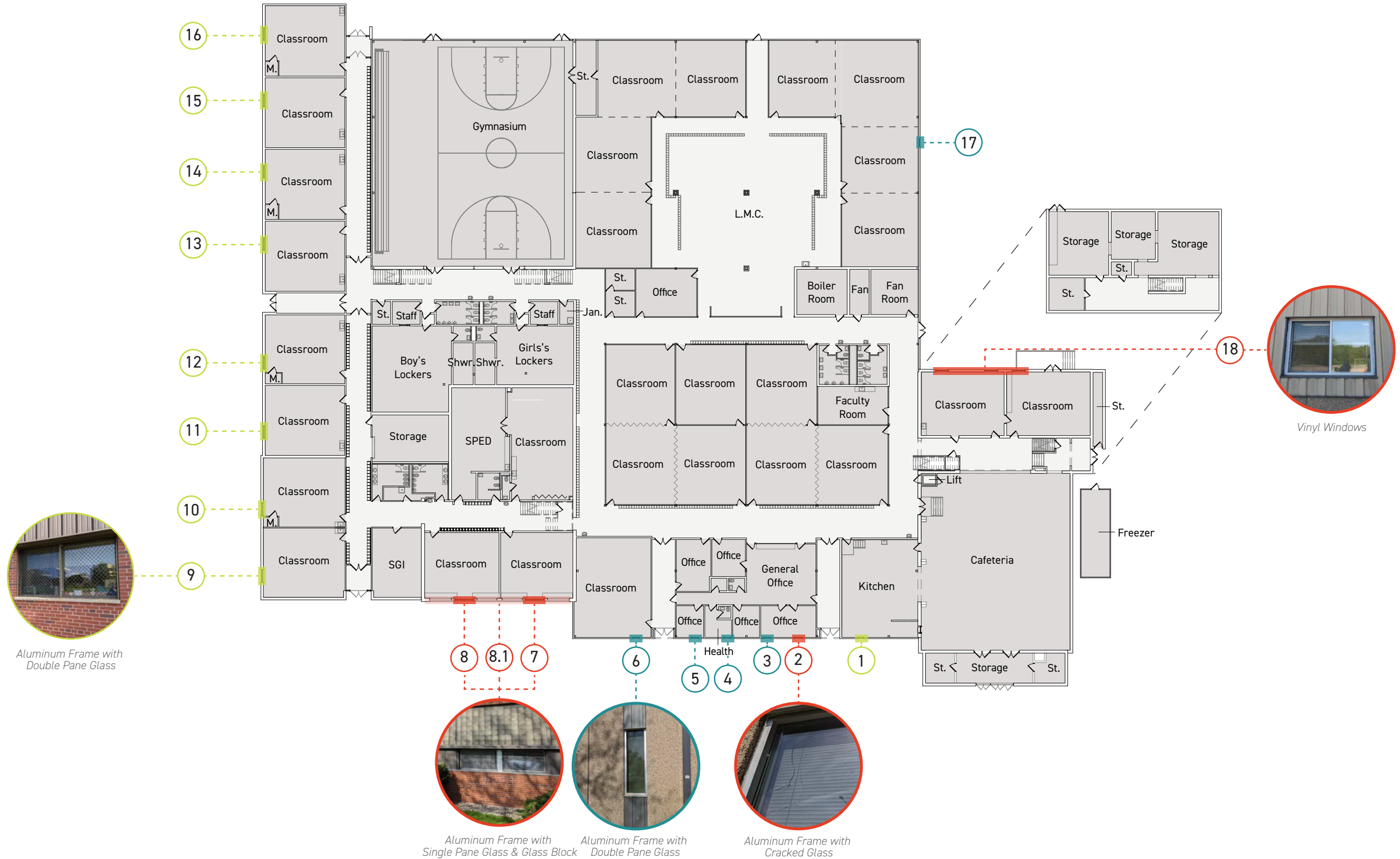
*Aluminum with Double Pane Glass*

## OVERALL EXTERIOR WINDOW CONDITION

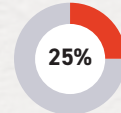
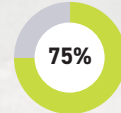
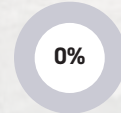


- |   |                            |
|---|----------------------------|
| <span style="color: teal;">●</span> Good      | No visible damage          |
| <span style="color: limegreen;">●</span> Fair | Some visible damage        |
| <span style="color: red;">●</span> Poor       | Substantial visible damage |

# markesan elementary school exterior window identification + analysis | first floor






OVERALL CONDITION RATING



ROOF AREAS

- ① = 2006 Installation, Condition Index: 56
- ② = Unknown Installation, Condition Index: Unknown
- ③ = 2008 Installation, Condition Index: 66
- ④ = 2012 Installation, Condition Index: 47
- ⑤ = 2006 Installation, Condition Index: 81
- ⑥ = 2006 Installation, Condition Index: 85
- ⑦ = 1990 Installation, Condition Index: Unknown

ROOF ASSESSMENT

-  = Good (10+ Years of Service Life Remaining)  
Condition Index: 0 to 31
-  = Fair (5-10 Years of Service Life Remaining)  
Condition Index: 32 to 64
-  = Poor (<4 Years of Service Life Remaining)  
Condition Index: 65 to 95

\*Assessment of "Good/Fair/Poor" based on information by the District.  
\*\*Condition Index provided by APEX Building Consultants.



markesan elementary school site assessment



OVERALL CONDITION RATING:



IDENTIFICATION + OVERALL ASSESSMENT

- 1 Athletic Fields
- 2 Site Concrete
- 3 East Parking Lot
- 4 Playground
- 5 North Parking Lot

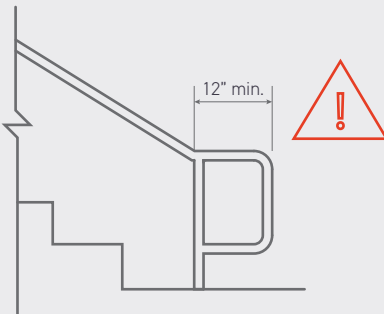


# markesan elementary school ada conditions + assessment

Overall Condition Rating:

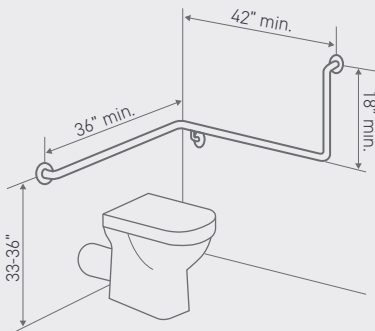


Most Concerning Item That Does Not Meet Code Requirements:



*Not providing ADA compliant railings at stairs*

Most Frequently Occurring Item That Does Not Meet Code Requirements:



*Not providing at proper grab bars at ADA accessible toilet.*

## GENERAL ASSESSMENT OF ADA CONDITIONS

### ■ Building Entrance Accessibility

### ■ ADA Parking Stalls

### ■ Accessible Routes of Travel

- Ramps
- Lifts
- Elevators

### ■ Railings

- Ramp Railings
- Stair Railings

### ■ Door Hardware

### ■ Door Clearances

- Push / Pull
- Thresholds
- Maneuvering

### ■ Toilet Rooms

- 5'-7" Wheelchair Clearance
- ADA Accessible Stall
- Unisex Toilet Room
- Grab Bars
- Showers

### ■ Protruding Objects

### ■ Drinking Fountains

### ■ Casework

- Transaction Counters
- Workstations Counters
- Counters with Sinks

# markesan elementary school ada conditions + assessment | first floor





# 02

## markesan middle/high school

### Scorecard Rating



75.0%



### Architectural Condition



### ADA Condition



### Building Systems



### Site Condition



### SUMMARY

Markesan Middle/High School provides a comprehensive program for 6th - 12th grade students.

**Grades Served:** 6th - 12th Grades

**Site Size:** 20.52 acres

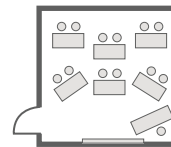
**Parking:** 204 stalls

### Original Date of Construction

1959

*As of 2023: 64 years old*

### Average Core Classroom Size Comparison



**884 sq. ft. - HS**  
**1,060 sq. ft. - MS**

### Recommended Size

*1<sup>st</sup> - 12<sup>th</sup>: 900 sq. ft.*  
*Kindergarten: 1200 sq. ft.*

### Square Footage

166,130  
Sq. Ft.

# appendix

## **ENGINEERING REPORTS**

The following pages include the original plumbing, mechanical, electrical, and life safety reports provided by the consulting engineers.

**Plumbing System Review:**

The following report is the result of a site visit by Justin Monk and Justin Davis of MSA Professional Services, Inc. that occurred on April 10, 2023. Site observations and interviews with staff were all used in the preparation of this report.

The original building was built in 1953. Renovations / Additions include: 1955, 1962, 1973, 1988, 1989, 1990, and 1998.

**Domestic Water Piping System**

Observations

- A. The building is supplied by the municipal water utility. It has a 4" ductile iron water service with a 3" water meter. The system piping material is majority galvanized piping with some areas consisting of type L copper. The isolations valves consist of gate valves and ball valves. There are no backflow preventers to serve the kitchen equipment. The system consists of cold water, hot water supply and hot water return. Majority of the piping is uninsulated. The system pressure is 45-60 psig. The hot water delivery time to the most remote fixture is under 30 seconds. There are no reports of leaks but reported water hammering issues. The overall system is in poor condition.

Recommendations

- A. All piping shall be replaced with new copper piping and ball valves. Any future renovations and or additions, shall account for the resizing of the domestic water pipe mains in order to provide adequate pressure and flow to any new and existing fixtures. Current plumbing and energy codes required faster hot water delivery time to all fixtures. This will extend the domestic hot water piping system piping closer to all hand washing type fixtures and increase the size of the pipe main and circulation pump.
- B. Provide water hammer arrestors upstream of all flush valves and faucets with quick closing valves.
- C. Provide insulation on all domestic water piping.
- D. Provide backflow protection on kitchen equipment.

**Fire Suppression Piping System**

Observations

- A. There is no automatic fire sprinkler system in the building.

Recommendations

- A. Existing water service is not capable of supporting a whole building automatic fire sprinkler system. A new properly sized water service will be required to support a whole building automatic fire sprinkler system.

**Sanitary Drain, Waste and Vent Piping System**

Observations

- A. The building system discharges to the municipal sewer. Some of the floor areas that are prone to spills have floor drains. The HVAC boilers are served by hub drains. The main system piping material is Cast Iron & PVC piping. The kitchen area fixtures, and equipment are served by a grease interceptor with no-hub cast iron and PVC grease waste piping material. No issues reported with system and is in fair condition.

Recommendations

- A. Provide drain piping with jetting cleaning maintenance once a year.



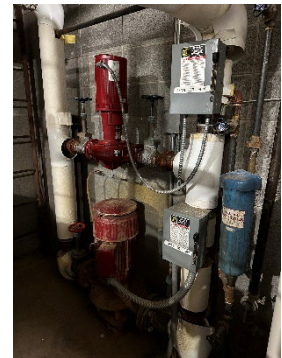
## HVAC

The following report is the result of a site visit by Randy All of Fredericksen Engineering, Inc. that occurred on April 10, 2023. Site observations and interviews with staff were used in the preparation of this report.

### Heating, Ventilation and Air Conditioning Systems

#### A. Existing Data

1. The building is served by a hot water boiler plant consisting of two (2) De Dietrich sectional boilers each rated at approximately 1,226,000 btu gross output.
2. The hot water pumping system is a primary-secondary constant flow arrangement with a constant speed primary pump serving each boiler and two (2) constant speed system pumps of differing capacities for summer and winter operation.
3. The building is air conditioned by a 50-ton Johnson Controls outdoor air-cooled condensing unit that is piped to a cooling coil located within a single large built-up air handling unit that serves the majority of the building. The 1990 classroom addition is air conditioned by residential-grade outdoor condensing units that are piped to individual gas-fired furnaces.
4. The majority of the building is ventilated by a large indoor built-up air handling unit that contains a hot water heating coil and a direct-expansion cooling coil. The office area is ventilated by a blower coil that is installed above the ceiling. The 1990 classroom addition is ventilated by four (4) gas-fired residential furnaces. All units are constant volume. The large air handling unit system also has duct-mounted hot water booster coils for zone control.
5. The building is controlled by a Johnson Controls Metasys digital control system.



#### B. Observations

1. The boilers are believed to have been installed between 2010 and 2013 although the exact date is not known at this time. They appear to be in good condition. The boilers have all been well maintained. The ASHRAE service life expectancy is 20-25 years.
2. The hot water system pumps appear to be about 25 years old. Their ASHRAE service life expectancy is approximately 20-25 years.
3. The large JCI 50-ton condensing unit was recently installed in 2021. It is in excellent condition. The ASHRAE service life expectancy for this unit is approximately 20-25 years.





Building Envelope Specialists

1223 W. Main Street #194 | Sun Prairie WI 53590 | 608.239.2382

## **Markesan School District Elementary Roof Inspection Summary**

**Date: April 27, 2019**

**Client: Markesan School District**

Core cuts were taken on the roofs at the following locations in April of 2019:  
High School / Middle School / Elementary

### **Core Information**

Elementary School – 5 Duro-Last Roofs, 1 Metal Roof. No Asbestos in Areas That Could Be Tested

#### Roof 01 (Three Roof Assemblies)

Metal Deck  
.5" Wood Fiberboard  
Hot Asphalt Smooth Roof  
1" XPS Insulation  
.5" Wood Fiberboard  
Hot Asphalt Smooth Roof  
1" EPS  
Duro-Last Membrane

#### Roof 03 (Three Roof Assemblies)

Metal Deck  
.5" Wood Fiberboard  
Hot Asphalt Smooth Roof  
1" XPS Insulation  
.5" Wood Fiberboard  
Hot Asphalt Smooth Roof w/ modified bitumen cap sheet  
1/4" EPS  
Duro-Last Membrane

#### Roof 04 (Three Roof Assemblies)

# preliminary budget

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# markesan district schools elementary school budget

## Preliminary Elementary School Capital Improvement Budget

Plumbing	\$2,100,000 - \$2,500,000
Heating, Ventilation, & Air Conditioning	\$1,100,000 - \$1,300,000
Electrical	\$1,140,000 - \$1,325,000
Interior (Doors, Flooring, Ceiling, Walls, etc.)	\$1,600,000 - \$1,830,000
Exterior (Doors, Windows, Roofing, Masonry, etc.)	\$2,500,000 - \$2,850,000
Site (Parking Lots, Playgrounds, Fields, etc.)	\$900,000 - \$1,050,000
Improvements for Handicap Accessibility (ADA)	<u>\$520,000 - \$605,000</u>
	\$9,860,000 - \$11,460,000

# markesan district schools middle/high school budget

## Preliminary Middle/High School Capital Improvement Budget

Plumbing	\$3,750,000 - \$4,360,000
Heating, Ventilation, & Air Conditioning	\$1,200,000 - \$1,380,000
Electrical	\$1,150,000 - \$1,330,000
Interior (Doors, Flooring, Ceiling, Walls, etc.)	\$1,130,000 - \$1,475,000
Exterior (Doors, Windows, Roofing, Masonry, etc.)	\$1,000,000 - \$1,200,000
Site (Parking Lots, Playgrounds, Fields, etc.)	\$1,700,000 - \$2,000,000
Improvements for Handicap Accessibility (ADA)	<u>\$960,000 - \$1,100,000</u>
	\$10,890,000 - \$12,845,000



# staff survey

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# markesan district schools survey questions

**Q1**

Consider/List a minimum of three facility improvements that would most benefit the students of your school. This could be educationally, co-curricular activities, or from the student life/experience perspective. If it is easier think about this in the inverse - what do your current facilities do that limit these three components of a student experience.

**Q2**

Consider/List a minimum of three classroom (or learning space if you are a specialist) related improvements that would enhance your ability to deliver an even better educational experience.

**Q3**

Consider/List a minimum of three things beyond your classroom (or learning space) that would enhance your ability to deliver an even better educational experience.

**Q4**

Are there academic or co-curricular programs you cannot offer because of the current facility?

# markesan district schools common/frequent responses

## District-Wide

- Temp control at both schools
- More storage (both buildings)
- Organizing grades within the building

## Markesan Elementary

- Bathrooms needed near Pre-K + Kindergarten classrooms
- More natural light / windows
- Parent Pick up / drop off concerns
- Walls for the Library
- Flooring (carpet vs a hard surface)
- Sinks in Classrooms
- ADA concerns
- Collab Space

## Markesan Middle / High School

- Wrestling room
- Improving restrooms
- More gym space
- Outside learning space
- Improvements / updates to furniture
- Safety concerns when it comes to a lock down

# school finance

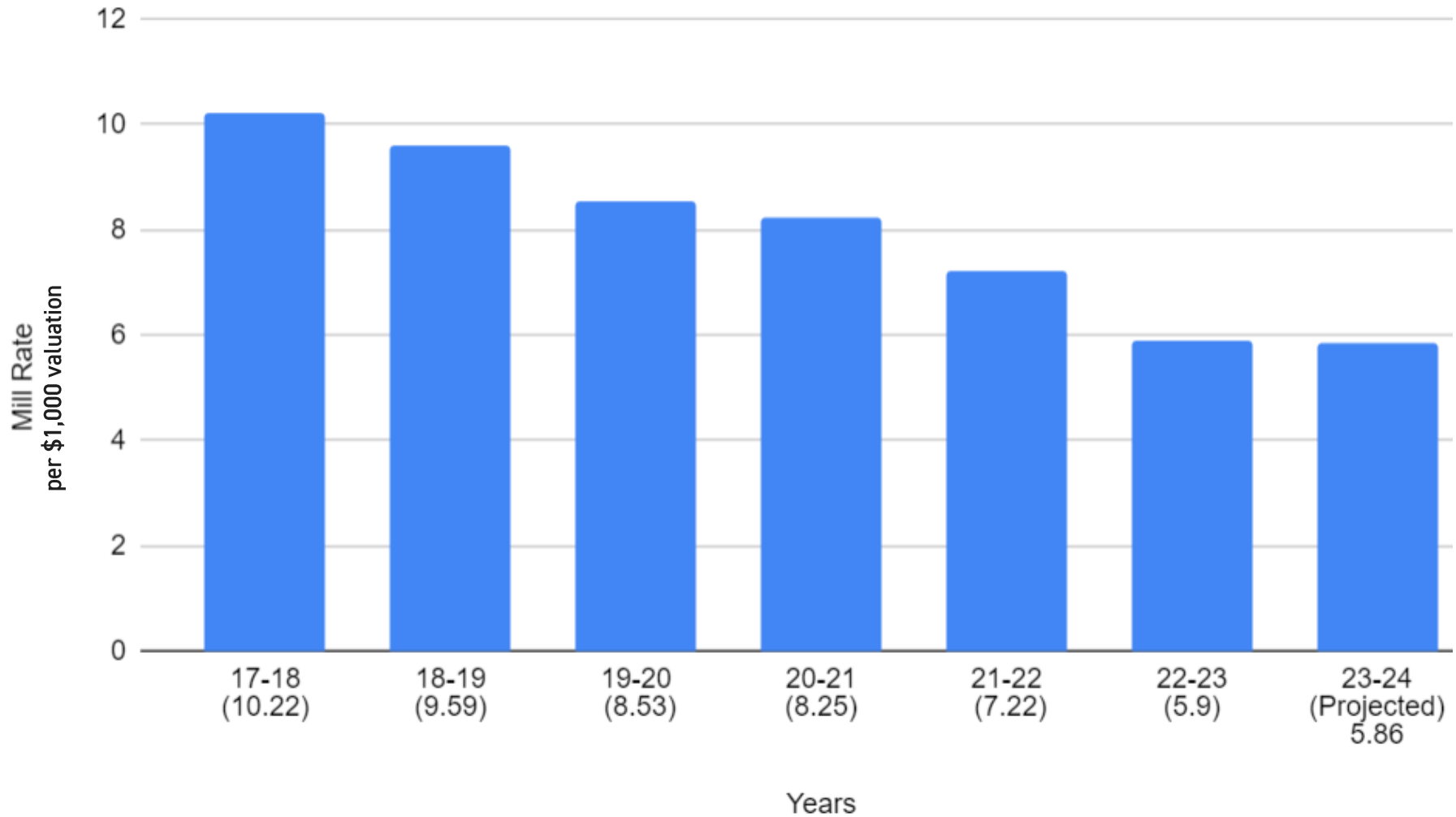
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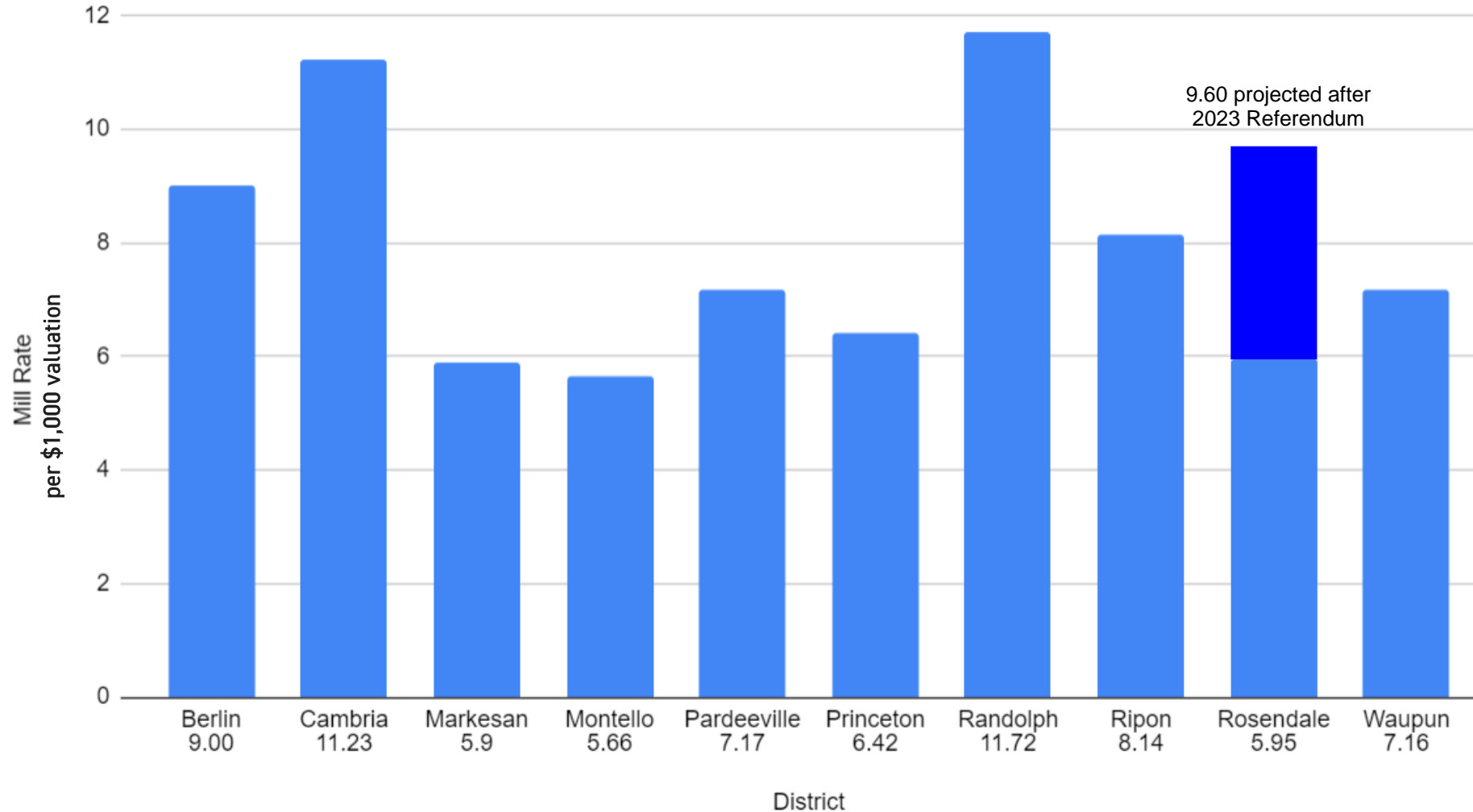
# markesan district schools district finances

## Markesan District Schools Mill Rate



# markesan district schools district finances

## Districts 22-23 Mill Rate



# markesan district schools district finances

## School District of Markesan SUMMARY OF HYPOTHETICAL REFERENDUM FINANCING SCENARIOS

	PRELIMINARY				
REFERENDUM AMOUNT	\$20,000,000	\$30,000,000	\$40,000,000	\$50,000,000	\$60,000,000
<b>MAX MILL RATE IMPACT*</b> <i>(Per \$1,000 valuation)</i>	\$1.89	\$2.86	\$3.83	\$4.80	\$5.77
<b>TAX IMPACT ON PROPERTY WITH FAIR MARKET VALUE:</b>					
<b>\$100,000 Home</b> <i>Maximum Impact</i>	\$189.00	\$286.00	\$383.00	\$480.00	\$577.00
	<i>Monthly Impact</i>	\$15.75	\$23.83	\$31.92	\$40.00
<b>\$200,000 Home</b> <i>Maximum Impact</i>	\$378.00	\$572.00	\$766.00	\$960.00	\$1,154.00
	<i>Monthly Impact</i>	\$31.50	\$47.67	\$63.83	\$80.00
<b>\$300,000 Home</b> <i>Maximum Impact</i>	\$567.00	\$858.00	\$1,149.00	\$1,440.00	\$1,731.00
	<i>Monthly Impact</i>	\$47.25	\$71.50	\$95.75	\$120.00



\* Impact represents the maximum projected annual mill rate for referendum approved debt service. Without a successful referendum, the mill rate for referendum approved debt service would remain \$0.00.

### Assumptions:

Two twenty year borrowings amortized using planning interest rates of 5.25%.

Mill rate based on the estimated 2023 Equalized Valuation (TID-OUT) of \$956,000,525 with annual growth of 1.00% for two years and 0.00% thereafter.

Tertiary Aid Impact (2023-24 July 1 Estimate): -18.47%.

Planning estimates only. Significant changes in market conditions will require adjustments to current financing plan. Rates subject to change.

# breakout session #1

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# markesan district schools breakout session #1

**Q1**

What parts of the Facility Study are of most interest to you – list top five district priorities and/or needs

**Q2**

What comments do you have regarding the Markesan School District financing?

**Q3**

Are there items and/or topics that you need more information?

# preliminary concepts

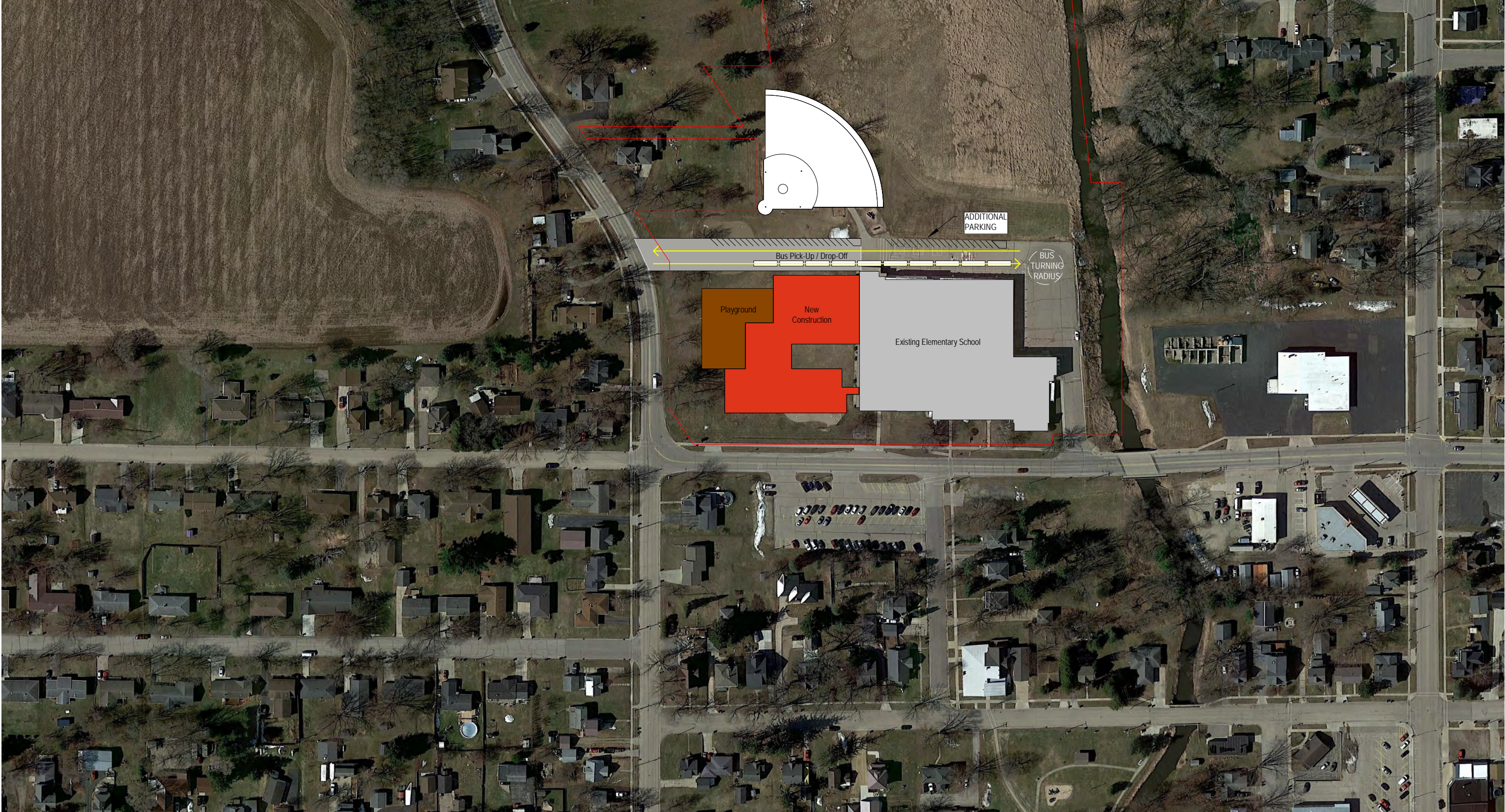
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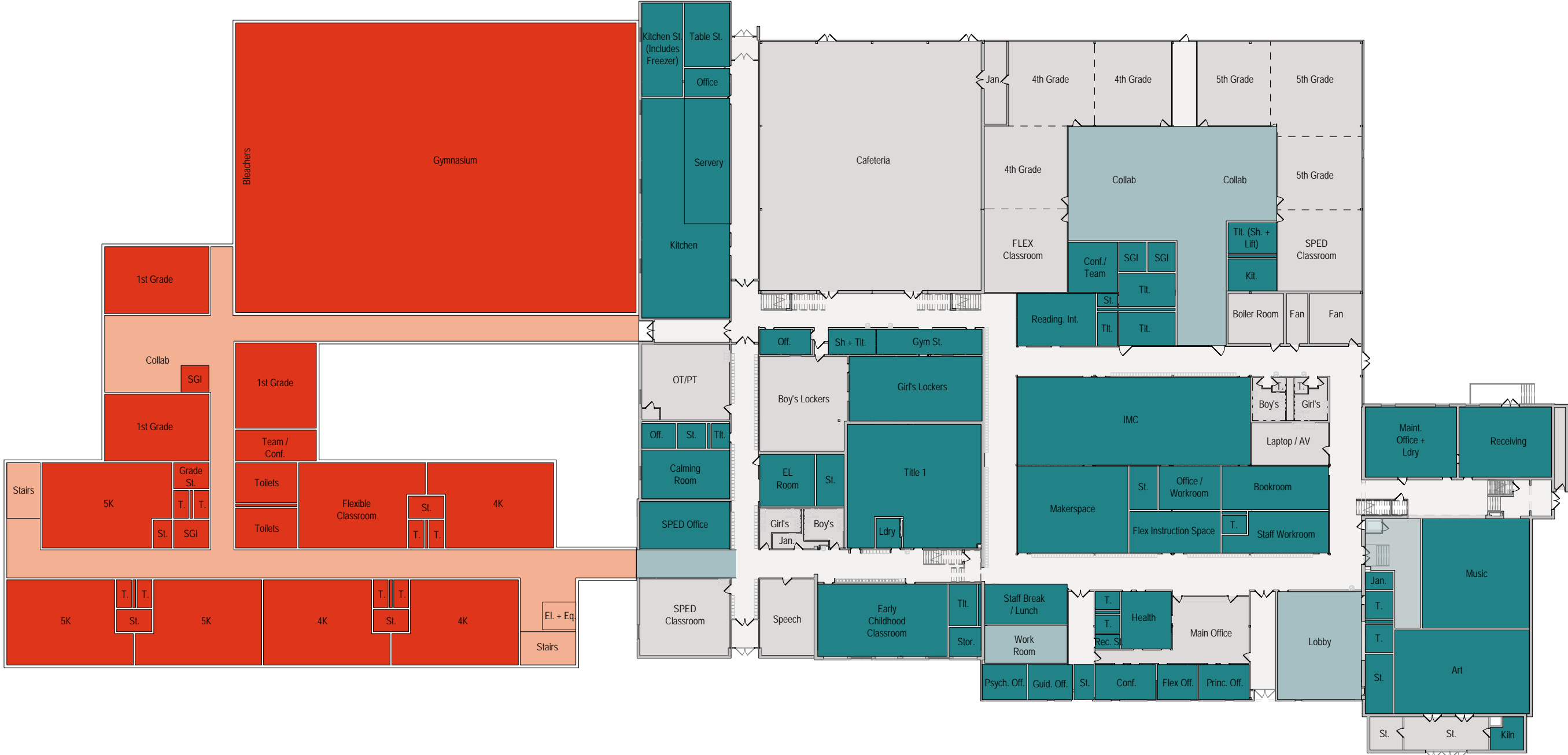
# Site Plan | MARKESAN ELEMENTARY SCHOOL

Option #1



# First Floor Plan | MARKESAN ELEMENTARY SCHOOL

Option #1



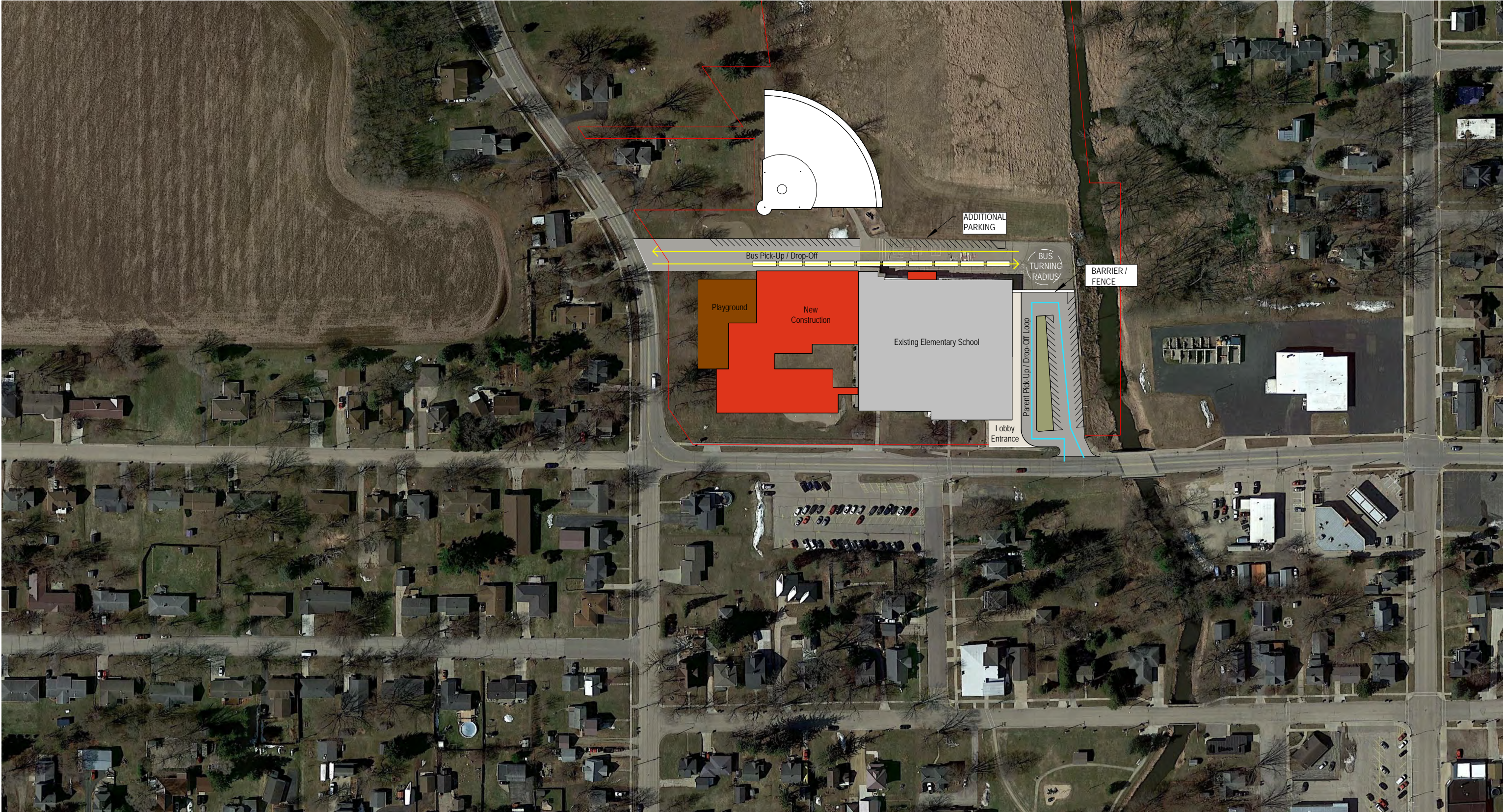
# Second Floor Plan | MARKESAN ELEMENTARY SCHOOL

Option #1



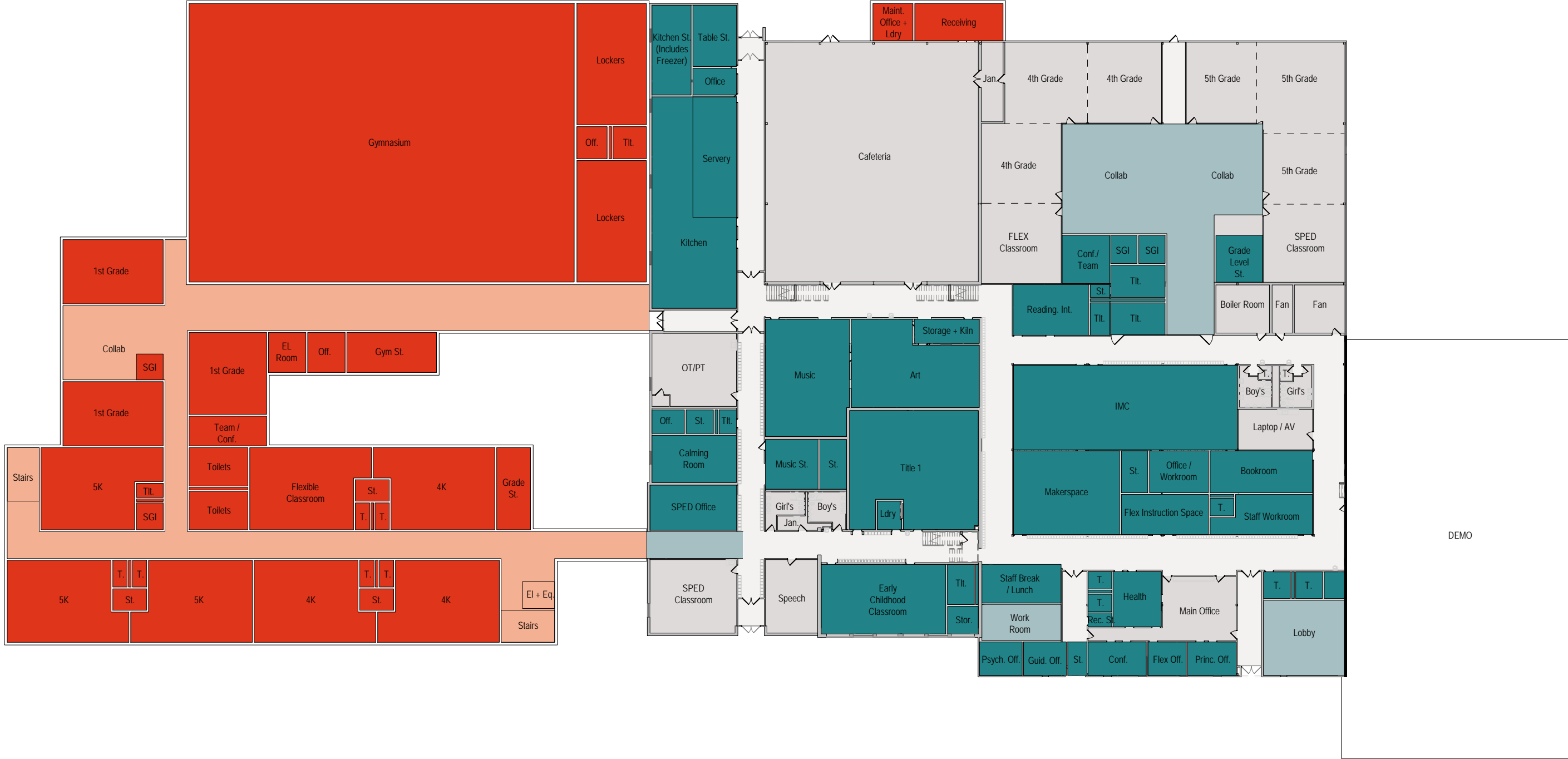
# Site Plan | MARKESAN ELEMENTARY SCHOOL

Option #2



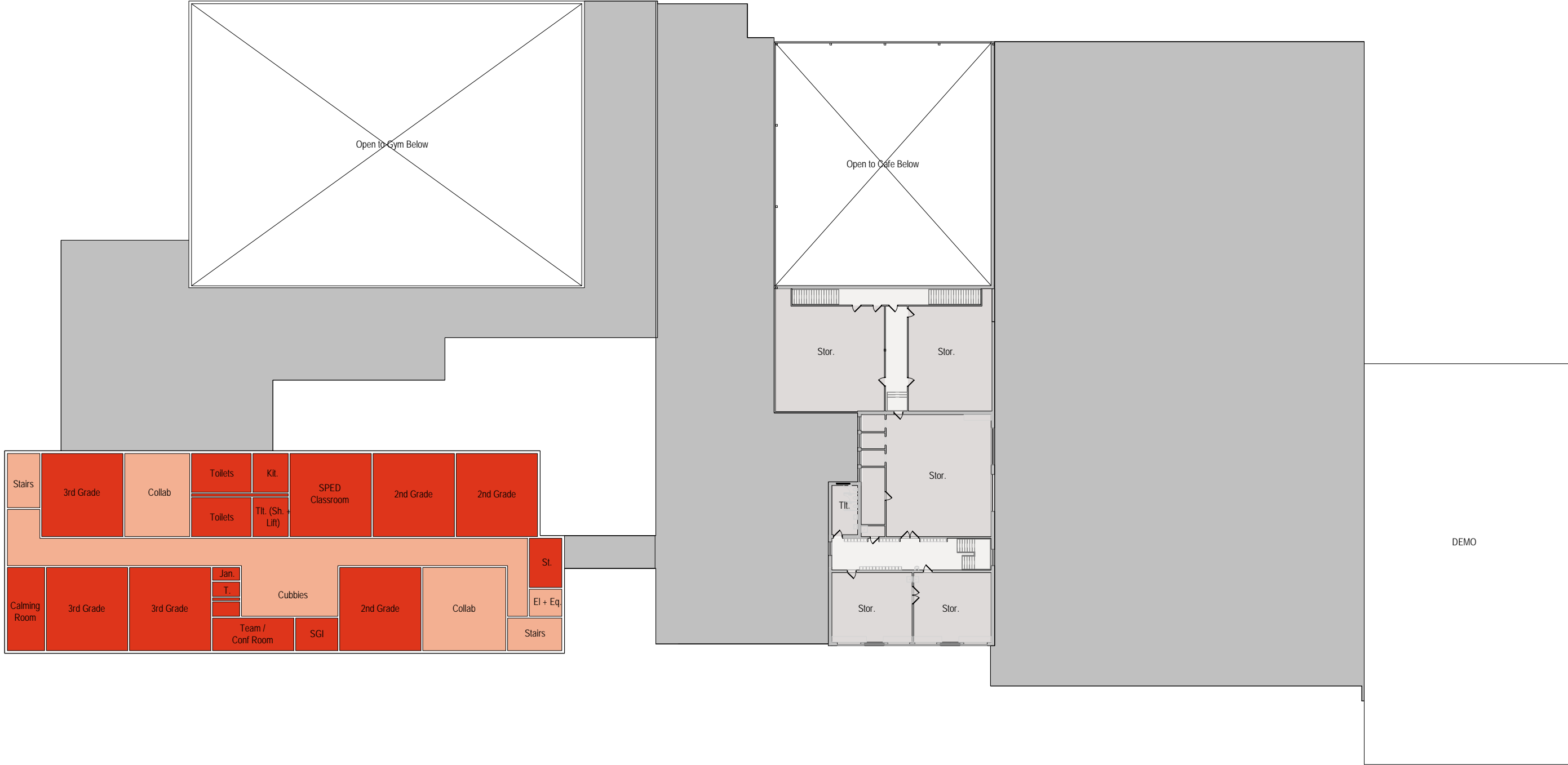
# First Floor Plan | MARKESAN ELEMENTARY SCHOOL

Option #2



# Second Floor Plan | MARKESAN ELEMENTARY SCHOOL

Option #2







# OPTION 1 - FLOOR PLAN | Markesan MSHS



# breakout session #2

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# markesan district schools breakout session #2

**Q1**

Which of the concept options best addresses the district's needs?

**Q2**

How would you prioritize the needs at the elementary versus the middle/high school?

**Q3**

Are there items and/or topics that you need more information?

Please join us at 6:30 for future Community Focus Group Meetings:  
October 4 – Markesan Elementary School  
October 24 – Markesan Middle / High School



# Thank you!

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